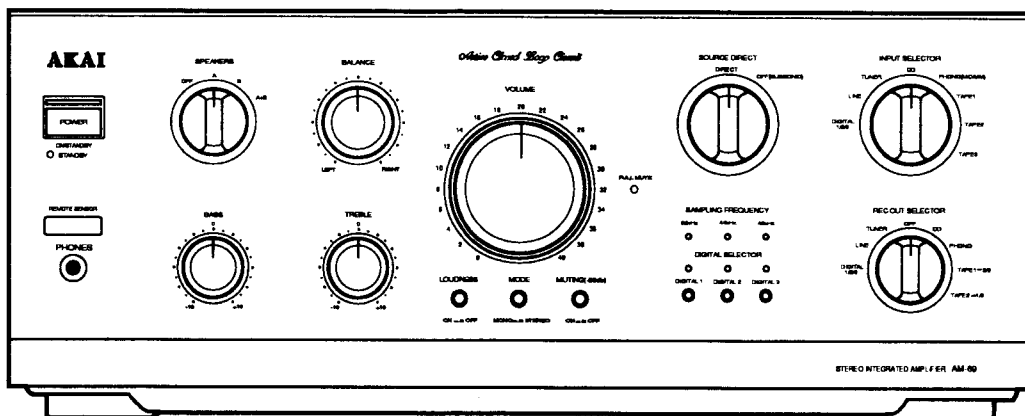


AKAI SERVICE MANUAL



MODEL AM-69

DIGITAL INTEGRATED AMPLIFIER

MODEL AM-59, 69

SPECIFICATIONS

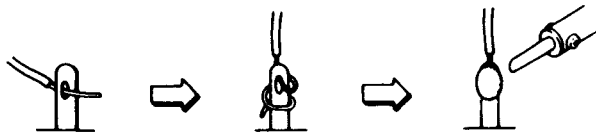
Power output		Cross talk	
AM-69	220 W+220 W (DIN, 4 ohms at 1 kHz, 1%)	CD to Phono	90 dB (1 kHz, 500mV input level)
	110 W + 110 W (FTC, 8 ohms at 20 Hz to 20 kHz, 0.05 %)	CD to Tuner/Tape	90 dB (1 kHz, 500mV input level)
AM-59	200W + 200 W (DIN, 4 ohms at 1 kHz, 1%)	Required speaker impedance	
	100 W+100 W (FTC, 8 ohms at 20 Hz to 20 kHz, 0.05 %)	A or B	4 to 16 ohms
Power band width	5 Hz to 60 kHz (0.1 %)	A and B	8 to 16 ohms
Total harmonic distortion	0.005 % (1 kHz, 8 ohms)	Power requirements	220-230 V, 50 Hz for Europe except U.K.
Frequency response	5 Hz to 100 kHz (+0 dB, -3 dB)	Power consumption	
Tone control		AM-69	400 W
Bass	± 10 dB (100 Hz)	AM-59	300 W
Treble	± 10 dB (10 kHz)	Dimensions	425 (W) X 177 (H) X 401 (D) mm
Input level / Impedance		Weight	
Phono (MM)	2.0 mV / 47 kohms	AM-69	14.7 kg
Phono (MC)	200 μV / 100 ohms	AM-59	13.8 kg
Tuner, CD, Tape	150 mV / 47 kohms		
Maximum input level		[DIGITAL section (AM-69 only)]	
Phono (MM)	170 mV	D/A converter	Interpolative one bit dual type
Tuner, CD, Tape	9 V (at tone control flat)	Digital filter	18 bit, 8 times over sampling
Damping factor	120 (1 kHz, 8 ohms)	Sampling frequency	32 kHz / 44.1 kHz / 48 kHz
Residual noise	0.1 mV (IEC-A)	Digital input level	
S/N ratio		Coaxial	0.5 Vp-p / 75 ohms
Phono (MM)	86 dB (IEC-A)	Optical	- 14 dBm to - 23dBm
Phono (MC)	71 dB (IEC-A)	Frequency response	5 Hz to 20 kHz (± 0.3 dB)
Tuner, CD, Tape	102 dB (IEC-A)	Dynamic range	96 dB
Audio mute	- 20dB	Total harmonic distortion	0.002 %
Full mute	- 70 dB		
Channel separation	65 dB (1 kHz) / 55 dB (10 kHz)	Standard accessory	
		Remote control unit	x 1
		Batteries for remote control	x 2
		Operator's manual	x 1

* For improvement purposes, specifications and design are subject to change without notice.

★ SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts indentified by the \triangle (*) symbol are critical for safety. Replace them only with the parts number specified
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
 - 1) Insulation Tape
 - 2) PVC tubing
 - 3) Spacers (Insulating Barriers)
 - 4) Insulation sheets for transistors
 - 5) Plastic screws for fixing micro switch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap the ends of the wires securely around the terminals before soldering.



6. Make sure that wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).

7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Make sure that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.

The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphonejacks, signal-input/output connectors, etc.) and the earth ground through a resistor of 1500 ohms paralleled with a 0.15 μ F capacitor, under the unit's normal working conditions. The leakage-current should be less than 0.5 mA rms AC.

The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 M ohms.

MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.

Please leave them at an appropriate depot.



★ INFORMATION

SYMBOLS FOR PRIMARY DESTINATION

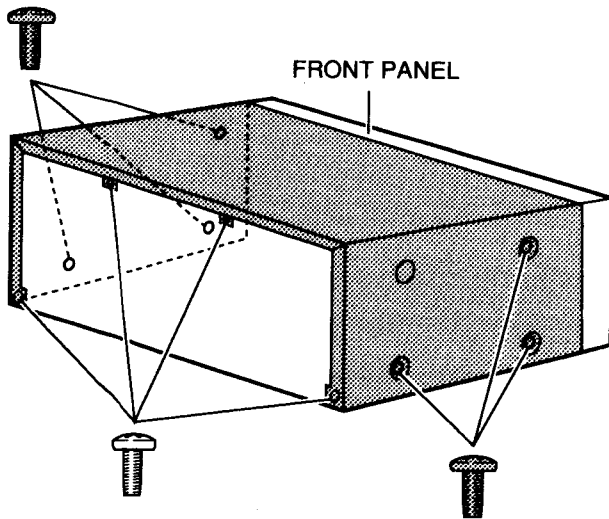
Alphabet indicates the destination of the units as listed below.

Symbols	Principal Destinations
A	U.S.A
B	U.K.
C	Canada
E	Europe (except UK)
J	Japan
S	Australia
V	Germany
U	Universal Area
Y*	Custom version

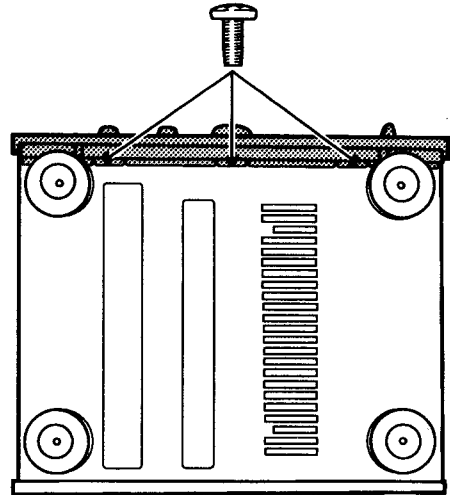
I. DISASSEMBLY

In case of trouble, etc., necessitating dismantling, please dismantle in the order shown in the illustrations. Reassemble in the reverse order.

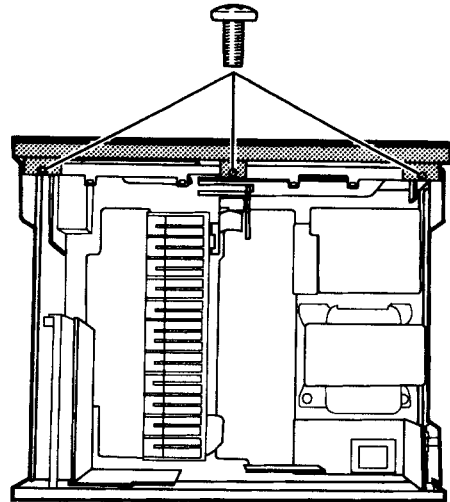
1. Removal of the UPPER COVER



2. Removal of the FRONT PANEL



Remove the eight knobs by pulling them out.



II. PRINCIPAL PARTS LOCATION

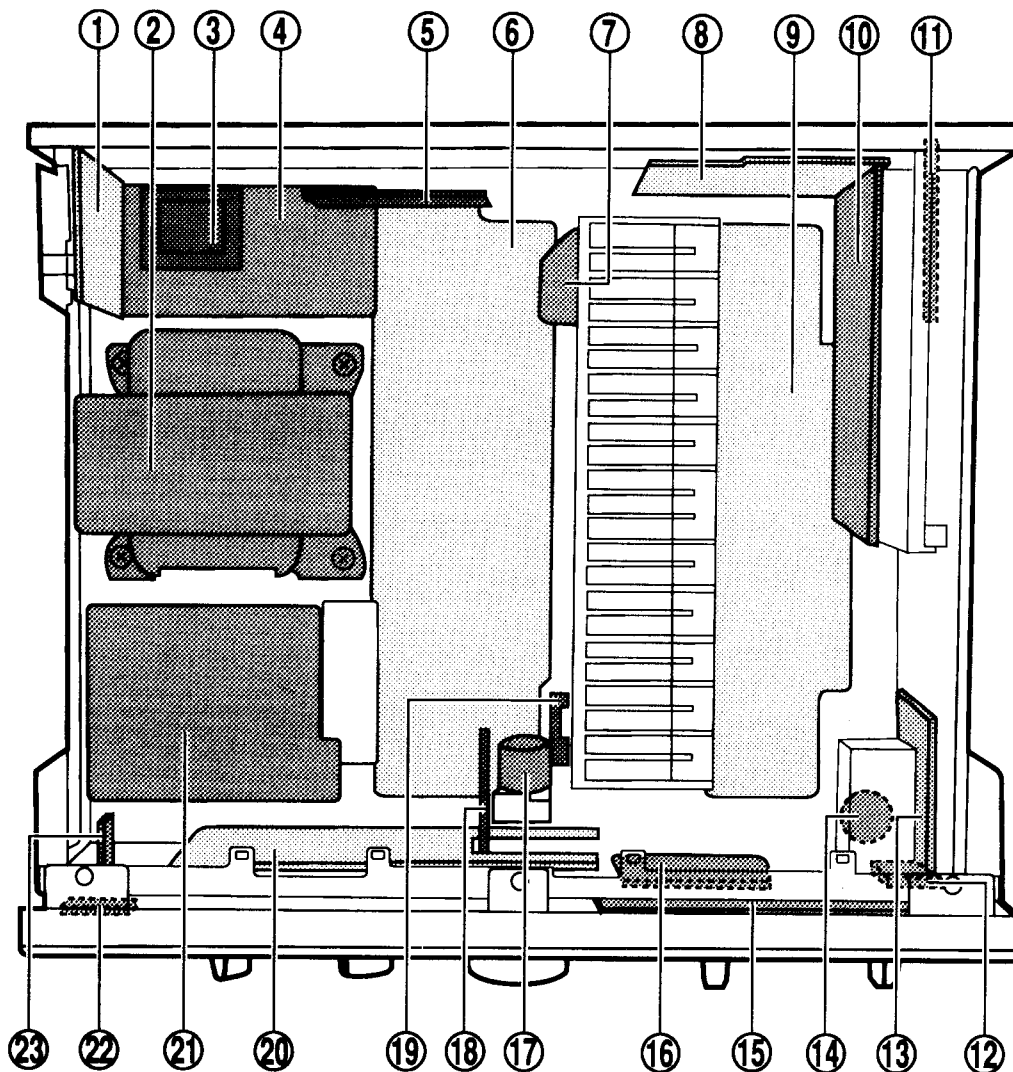


Fig.2-1

- | | |
|--------------------------|--------------------------|
| 1. PRIMARY PCB | 13. INPUT SW PCB |
| 2. POWER TRANSFORMER | 14. INPUT SW MOTOR |
| 3. SUB TRANSFORMER | 15. SYSCON PCB |
| 4. SUB TRANS PCB | 16. SOURCE DIRECT SW PCB |
| 5. SP TERMINAL PCB | 17. VOLUME MOTOR |
| 6. I - AMP PCB | 18. VOLUME PCB |
| 7. THERMO (L) PCB | 19. THERMO (R) PCB |
| 8. INPUT PCB | 20. TONE PCB |
| 9. V - AMP PCB | 21. POWER SUPPLY PCB |
| 10. REC SELECTOR PCB | 22. POWER SW PCB |
| 11. DAC PCB (AM-69 only) | 23. PHONES JACK PCB |
| 12. REC OUT SW PCB | |

III. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list the Part No., Model No. and the description of each part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

b) PC Board

2. HEAD BASE BLOCK

6. MAIN PC BOARD

Ref. No.	Part No.	Description
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20×03STL CMT
4	ZS-536488	BID20×08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

Ref. No.	Part No.	Description
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

↑
 ↑
 SP (Service Parts) Classification
 This number corresponds with the individual parts index number in that figure.

↑
 ↑
 Symbols for primary destination
 [A] : AAL (U.S.A) [S] : SAA (Australia)
 [B] : BEAB (England) [U] : U/T (Universal Area)
 [C] : CSA (Canada)
 [E] : CEE (Europe) [V] : VDE (Germany)
 [J] : JPN (Japan) [Y] : Custom Version
 ↑
 SP (Service Parts) Classification
 These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

△ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

△ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
1	AX-415115M	REMOCON RC-S59	64	ES-415137J	SW SPE.ROTARY SRBAA48 02-08N [AM-69]
2	AX-415116M	REMOCON RC-S69	65	ES-394427J	SW TACT SOR-133HS T05 [AM-69]
3	*BT-415037M	TRANS POW A1030S-EV	66	ET-403432J	DETECTOR SPS-420-1
4	*BT-415117M1	TRANS POW A2077 EV [AM-59][T1]	67	ET-356336	TR DTA114ES
5	*BT-415118M1	TRANS POW A2078 EV [AM-69][T1]	68	ET-369248	TR DTA114YS
6	EC-368118	C DBL LAYER EECS5R5H 224 5.5DC	69	ET-415140J	TR DTA115TS T05 [AM-69]
7	EC-381263J	C EC V SNP 103M 63.0DC	70	ET-354415	TR DTA144ES [AM-69]
8	ED-405359J	D LED SEL2915A C,D ORANGE [AM-69]	71	ET-353897	TR DTC114ES
9	ED-415085J	D LED SLR-33VC3F RED	72	ET-354365	TR DTC114YS
10	ED-403987J	D LED SLR33MC3F GREEN [AM-69]	73	ET-354414	TR DTC144ES [AM-69]
11	*ED-379981J	D SILICON EG01LF-F4 F10 400/0.7A	74	ET-322353	TR FET 2SK117 Y
12	ED-348990	D SILICON H DS446	75	ET-360749	TR FET 2SK170 BL
13	ED-301911	D SILICON H DS448	76	ET-337759	TR FET 2SK246 GR [AM-69]
14	ED-344280	D SILICON H GMA-01-FY2 F05	77	*ET-415051J	TR 2SA1186 P,Y LF118
15	ED-307572	D SILICON H 1SS131	78	ET-338244	TR 2SA1207 R,S
16	ED-624903	D SILICON H 1S2473	79	ET-368048	TR 2SA1208 S
17	*ED-384278J	D SILICON RBV602 200/6.0A	80	*ET-345626	TR 2SA1248 S,T [AM-69]
18	*ED-511907	D SILICON 1N4002 100/1.0A	81	ET-353899	TR 2SA1317 S,T,U
19	*ED-392651J	D SILICON 1N5401 F15 100/3.0A	82	*ET-352726	TR 2SA1392 T,U [AM-69]
20	*ED-370990	D SILICON 1SR35-100A HS F10	83	*ET-403527J	TR 2SA1507 S,T [AM-69]
21	*ED-346557	D ZENER H HZ12A3L	84	*ET-415158J	TR 2SA1837
22	*ED-330218	D ZENER H HZ15-2L	85	*ET-349705	TR 2SC2320 E,F,G
23	*ED-346567	D ZENER H HZ16-1L	86	*ET-415053J	TR 2SC2837 P,Y LF118
24	ED-346570	D ZENER H HZ18-3L	87	*ET-348830	TR 2SC2909 S,T
25	*ED-330219	D ZENER H HZ20-2L	88	ET-368047	TR 2SC2910 S
26	*ED-377933	D ZENER H HZ27-3LFA F10	89	*ET-345625	TR 2SC3116 S,T [AM-69]
27	*ED-343854	D ZENER H HZ30-2L	90	ET-397160J	TR 2SC3330 R,S,T,U,V
28	*ED-343410	D ZENER H HZ6A1L [AM-69]	91	ET-378524J	TR 2SC3383 S,T,U
29	*ED-346525	D ZENER H HZ6A3L	92	ET-394735J	TR 2SC3792 T05
30	ED-346530	D ZENER H HZ6C3L	93	*ET-403526J	TR 2SC3902 S,T
31	*EF-415131J	FUSE S504 T 250V 315MA	94	*ET-415156J	TR 2SC4793
32	*EF-405396J	FUSE S506 T 250V 1.00A [AM-59]	95	*ET-376880	TR 2SD1266 P
33	*EF-405397J	FUSE S506 T 250V 1.25A [AM-69]	96	EV-415136J	SW.SPE.ROTARY SRBAA47 02-07N [AM-59]
34	*EF-405403J	FUSE S506 T 250V 5.00A	97	EV-401270J	VR ROTARY RK16312 B103X2
35	EI-330352	IC BA6109	98	EV-416950J	VR ROTARY RK1631220 SPL W104 UP
36	EI-416800J	IC LC66404A-4B67 A2075-1	99	EV-415032M	VR SPL EUWM HD003 B15 B104X2 [AM-59]
37	EI-403530J	IC LC7822N	100	EV-415139J	VR SPL RK18112MC B104X2 [AM-69]
38	EI-393323J	IC M5218AL-771			
39	EI-393326J	IC M5218AP-721			
40	EI-348785	IC M5220L			
41	EI-360043	IC M5220P			
42	*EI-362587J1	IC M5238AL			
43	EI-412415J	IC PCM69AP-J			
44	EI-390063J	IC PD0037			
45	EI-403437J	IC SM5840AP			
46	EI-360040J1	IC TC74HCU04AP			
47	EI-354080	IC UPC1237H			
48	EI-382875J	OSC CE CST4.00MGW 4MHZ			
49	EJ-394459J	SOCKET OPTICAL GP1F32R			
50	EJ-394490J	SOCKET OPTICAL GP1F32T			
51	EJ-415134J	SW SLIDE SSSU04 2-04-02S			
52	*EQ-415055J	RELAY POW VS-6MB 1NO 6V			
53	EQ-403529J1	RELAY POW 12S MBU524UL3 2NO12V			
54	EQ-400957J	RELAY SIG RY12W-OH-K 2TR 12V			
55	*ER-320528	R FUSE H ERD2FC 1/4W 22R0G [AM-69]			
56	*ER-341493	R FUSE H S10 ERD2FC 1/4W 1001G			
57	*ER-318248	R FUSE H S10 ERD2FC 1/4W 47R0G			
58	*ER-401039J	R FUSE V T05 ERD2FCV 1/4W 4R7J			
59	ES-415120J	SW PUSH SPEC31 3THROW *			
60	ES-415100J	SW ROTARY SRBV14 01-04N			
61	ES-415126J	SW ROTARY SRBV17 01-07N [AM-59]			
62	ES-415138J	SW ROTARY SRBV18 01-08N [AM-69]			
63	ES-415099J	SW ROTARY SRBV22 02-02N			

2. P.C BOARD BLOCK

Ref. No.	Part No.	Description
1-A	BA-A2077T020A	ML PC (#) MAIN AMP BLK AM-59/ML
1-B	BA-A2077T020B	ML PC (#) MAIN AMP BLK AM-69/ML
2-A	BA-A2077T030A	ML PC (#) PREAMP BLK AM-59/ML
2-B	BA-A2077T030B	ML PC (#) PREAMP BLK AM-69/ML
3-A	BA-A2077T040A	ML PC (#) SYSCON BLK AM-59/ML
3-B	BA-A2077T040B	ML PC (#) SYSCON BLK AM-69/ML
4	BA-A2078T050A	ML PC DAC BLK AM-69/ML [AM-69]

PC (#) MAIN BLK CONSISTS OF FOLLOWING P.C BOARDS.

- V-AMP P.C BOARD
- I-AMP P.C BOARD
- POWER SUPPLY P.C BOARD
- SP TERMINAL P.C BOARD
- PHONES JACK P.C BOARD
- THERMO (L) P.C BOARD
- THERMO (R) P.C BOARD

PC (#) PRE AMP BLK CONSISTS OF FOLLOWING P.C BOARDS.

- INPUT P.C BOARD
- REC SELECTOR P.C BOARD
- INPUT SW P.C BOARD
- SOURCE DIRECT SW P.C BOARD
- TONE P.C BOARD
- REC OUT SW P.C BOARD
- VOLUME P.C BOARD
- PRIMARY P.C BOARD
- SUB TRANS P.C BOARD

PC (#) SYSCON BLK CONSISTS OF FOLLOWING P.C BOARDS.

- SYSCON P.C BOARD
- POWER SW P.C BOARD

3. V-AMP P.C BOARD

Ref. No.	Part No.	Description
D1	ED-301911	D SILICON H DS448
D2	ED-301911	D SILICON H DS448
D3	*ED-346567	D ZENER H HZ16-1L
D4	*ED-346567	D ZENER H HZ16-1L
D7	*ED-343854	D ZENER H HZ30-2L
D8	*ED-343854	D ZENER H HZ30-2L
D9	*ED-343854	D ZENER H HZ30-2L
D10	*ED-343854	D ZENER H HZ30-2L
D51	ED-301911	D SILICON H DS448
D52	ED-301911	D SILICON H DS448
D53	*ED-346567	D ZENER H HZ16-1L
D54	*ED-346567	D ZENER H HZ16-1L
IC1	EI-393326J	IC M5218AP-721
R10	*ER-375108	R CB H S10FLR RDS 1/4W 272J
R13	*ER-375108	R CB H S10FLR RDS 1/4W 272J
R16	*ER-378517J	R OMF H S15 FS 2W 681J
R21	*ER-378517J	R OMF H S15 FS 2W 681J
R60	*ER-375108	R CB H S10FLR RDS 1/4W 272J
R63	*ER-375108	R CB H S10FLR RDS 1/4W 272J
R66	*ER-378517J	R OMF H S15 FS 2W 681J
R71	*ER-378517J	R OMF H S15 FS 2W 681J
TR1	ET-322353	TR FET 2SK117 Y
TR2	ET-368047	TR 2SC2910 S
TR3	ET-368048	TR 2SA1208 S
TR4	*ET-368048	TR 2SA1208 S
TR5	*ET-368048	TR 2SA1208 S
TR6	*ET-368047	TR 2SC2910 S
TR7	*ET-368047	TR 2SC2910 S
TR8	*ET-368047	TR 2SC2910 S
TR10	*ET-368048	TR 2SA1208 S
TR51	ET-322353	TR FET 2SK117 Y
TR52	ET-368047	TR 2SC2910 S
TR53	ET-368048	TR 2SA1208 S
TR54	*ET-368048	TR 2SA1208 S
TR55	*ET-368048	TR 2SA1208 S
TR56	*ET-368047	TR 2SC2910 S
TR57	*ET-368047	TR 2SC2910 S
TR58	*ET-368047	TR 2SC2910 S
TR60	*ET-368048	TR 2SA1208 S

4. I-AMP P.C BOARD

Ref. No.	Part No.	Description
C101	EC-381263J	C EC V SNP 103M 63.0DC
C102	EC-381263J	C EC V SNP 103M 63.0DC
D101	*ED-384278J	D SILICON RBV602 200/6.0A
D102	*ED-384278J	D SILICON RBV602 200/6.0A [AM-69]
D105	ED-348990	D SILICON H DS446
D106	ED-348990	D SILICON H DS446
D107	ED-348990	D SILICON H DS446
D108	ED-348990	D SILICON H DS446
D109	ED-348990	D SILICON H DS446
D110	ED-346570	D ZENER H HZ18-3L
D111	ED-346570	D ZENER H HZ18-3L
D112	ED-346570	D ZENER H HZ18-3L
D114	ED-346567	D ZENER H HZ16-1L
D120	ED-307572	D SILICON H 1SS131
D121	ED-307572	D SILICON H 1SS131
D122	ED-307572	D SILICON H 1SS131
D155	ED-348990	D SILICON H DS446
D156	ED-348990	D SILICON H DS446
D181	*ED-392651J	D SILICON 1N5401 F15 100/3.0A
D182	*ED-392651J	D SILICON 1N5401 F15 100/3.0A
FR101	*ER-318248	R FUSE H S10 ERD2FC 1/4W 47R0G
FR102	*ER-318248	R FUSE H S10 ERD2FC 1/4W 47R0G
FR107	*ER-341493	R FUSE H S10 ERD2FC 1/4W 1001G
FR108	*ER-341493	R FUSE H S10 ERD2FC 1/4W 1001G
FR151	*ER-318248	R FUSE H S10 ERD2FC 1/4W 47R0G
FR152	*ER-318248	R FUSE H S10 ERD2FC 1/4W 47R0G
FR157	*ER-341493	R FUSE H S10 ERD2FC 1/4W 1001G
FR158	*ER-341493	R FUSE H S10 ERD2FC 1/4W 1001G
IC101	EI-354080	IC UPC1237H
L101	EO-332116	COIL FIX 2 103AK-006A 2R2K
L151	EO-332116	COIL FIX 2 103AK-006A 2R2K
R103	*ER-324186	R CB H S10 FS RDS 1/4W 681J
R105	*ER-355214	R OMF H S15 FS 2W 151J
R109	ER-381265J	R OMF H S20 FS 3W 561J
R110	ER-383007J	R OMF H S12 FS 1W 1R0J
R111	ER-383007J	R OMF H S12 FS 1W 1R0J
R112	ER-383007J	R OMF H S12 FS 1W 1R0J
R113	ER-383007J	R OMF H S12 FS 1W 1R0J
R114	*ER-368226	R CT P R33+R33 5W
R115	*ER-368226	R CT P R33+R33 5W
R116	ER-400150J	R OMF H S20 FS 3W 4R7J
R117	ER-381266J	R OMF H S20 FS 3W 100J
R153	*ER-324186	R CB H S10 FS RDS 1/4W 681J
R155	*ER-355214	R OMF H S15 FS 2W 151J
R159	ER-381265J	R OMF H S20 FS 3W 561J
R160	ER-383007J	R OMF H S12 FS 1W 1R0J
R161	ER-383007J	R OMF H S12 FS 1W 1R0J
R162	ER-383007J	R OMF H S12 FS 1W 1R0J
R163	ER-383007J	R OMF H S12 FS 1W 1R0J
R164	*ER-368226	R CT P R33+R33 5W
R165	*ER-368226	R CT P R33+R33 5W
R166	ER-400150J	R OMF H S20 FS 3W 4R7J
R167	ER-381266J	R OMF H S20 FS 3W 100J
R181	*ER-418459J	R MF H T73 MK4 1W 220J
RL101	EQ-403529J1	RELAY POW 12S MBU524UL3 2NO12V
RL102	EQ-403529J1	RELAY POW 12S MBU524UL3 2NO12V
RL103	EQ-403529J1	RELAY POW 12S MBU524UL3 2NO12V
TR101	ET-368047	TR 2SC2910 S
TR102	*ET-368047	TR 2SC2910 S
TR103	*ET-368048	TR 2SA1208 S
TR108	*ET-415053J	TR 2SC2837 P,Y LF118
TR109	*ET-415053J	TR 2SC2837 P,Y LF118
TR110	*ET-415051J	TR 2SA1186 P,Y LF118
TR111	*ET-415051J	TR 2SA1186 P,Y LF118
TR112	ET-378524J	TR 2SC3383 S,T,U
TR113	ET-368048	TR 2SA1208 S
TR116	ET-378524J	TR 2SC3383 S,T,U
TR117	ET-378524J	TR 2SC3383 S,T,U
TR118	ET-378524J	TR 2SC3383 S,T,U
TR119	ET-378524J	TR 2SC3383 S,T,U
TR151	ET-368047	TR 2SC2910 S
TR152	*ET-368047	TR 2SC2910 S
TR153	*ET-368048	TR 2SA1208 S
TR158	*ET-415053J	TR 2SC2837 P,Y LF118
TR159	*ET-415053J	TR 2SC2837 P,Y LF118
TR160	*ET-415051J	TR 2SA1186 P,Y LF118
TR161	*ET-415051J	TR 2SA1186 P,Y LF118
TR162	ET-378524J	TR 2SC3383 S,T,U

5. POWER SUPPLY P.C BOARD

Ref. No.	Part No.	Description
D201	*ED-379981J	D SILICON EG01LF-F4 F10 400/0.7A
D202	*ED-379981J	D SILICON EG01LF-F4 F10 400/0.7A
D203	*ED-379981J	D SILICON EG01LF-F4 F10 400/0.7A
D204	*ED-379981J	D SILICON EG01LF-F4 F10 400/0.7A
D205	*ED-377933	D ZENER H HZ27-3LFA F10
D206	*ED-377933	D ZENER H HZ27-3LFA F10
D207	*ED-377933	D ZENER H HZ27-3LFA F10
D208	*ED-377933	D ZENER H HZ27-3LFA F10
D209	*ED-370990	D SILICON 1SR35-100A HS F10
D210	*ED-370990	D SILICON 1SR35-100A HS F10
D211	*ED-346557	D ZENER H HZ12A3L
D213	*ED-343410	D ZENER H HZ6A1L [AM-69]
D214	*ED-370990	D SILICON 1SR35-100A HS F10 [AM-69]
D215	*ED-370990	D SILICON 1SR35-100A HS F10 [AM-69]
D216	*ED-370990	D SILICON 1SR35-100A HS F10 [AM-69]
D217	*ED-370990	D SILICON 1SR35-100A HS F10 [AM-69]
D218	*ED-346567	D ZENER H HZ16-1L [AM-69]
D219	*ED-346567	D ZENER H HZ16-1L [AM-69]
FR221	*ER-320528	R FUSE H ERD2FC 1/4W 22R0G [AM-69]
FR222	*ER-320528	R FUSE H ERD2FC 1/4W 22R0G [AM-69]
R201	*ER-415149J	R CB V T05 FLR 25FVJ 1/4W 151J
R202	*ER-415149J	R CB V T05 FLR 25FVJ 1/4W 151J
R208	*ER-415143J	R CB V T05 FLR 25FVJ 1/4W 2R2J
R212	*ER-415150J	R CB V T05 FLR 25FVJ 1/4W 4R7J [AM-69]
R223	*ER-704153	R OMF 1W 390J [AM-69]
TR201	*ET-368048	TR 2SA1208 S
TR202	*ET-368048	TR 2SA1208 S
TR203	*ET-368047	TR 2SC2910 S
TR204	*ET-368047	TR 2SC2910 S
TR205	*ET-415156J	TR 2SC4793
TR206	*ET-415158J	TR 2SA1837
TR207	*ET-376880	TR 2SD1266 P
TR211	*ET-352726	TR 2SA1392 T,U [AM-69]
TR212	*ET-403527J	TR 2SA1507 S,T [AM-69]
TR213	*ET-378524J	TR 2SC3383 S,T,U [AM-69]
TR214	ET-352726	TR 2SA1392 T,U [AM-69]
TR215	*ET-352726	TR 2SA1392 T,U [AM-69]
TR216	ET-378524J	TR 2SC3383 S,T,U [AM-69]
TR217	*ET-378524J	TR 2SC3383 S,T,U [AM-69]
TR218	*ET-345625	TR 2SC3116 S,T [AM-69]
TR219	*ET-345626	TR 2SA1248 S,T [AM-69]
TR220	*ET-378524J	TR 2SC3383 S,T,U [AM-69]
F2	*EF-415131J	FUSE S504 T 250V 315MA
F3	*EF-415131J	FUSE S504 T 250V 315MA
F4-A	*EF-405396J	FUSE S506 T 250V 1.00A [AM-59]
F4-B	*EF-405397J	FUSE S506 T 250V 1.25A [AM-69]
F5-A	*EF-405396J	FUSE S506 T 250V 1.00A [AM-59]
F5-B	*EF-405397J	FUSE S506 T 250V 1.25A [AM-69]

6. SP TERMINAL P.C BOARD

Ref. No.	Part No.	Description
TM301	EJ-342935	TERMINAL W/SCREW YKD31-0132P8P

7. PHONES JACK P.C BOARD

Ref. No.	Part No.	Description
J601	EJ-391132J	PHONE J 3P YKB24-5162 GP 6.3

8. THERMO (L) P.C BOARD

Ref. No.	Part No.	Description
TR104	*ET-378524J	TR 2SC3383 S,T,U
TR105	*ET-352726	TR 2SA1392 T,U
TR106	*ET-403526J	TR 2SC3902 S,T
TR107	*ET-403527J	TR 2SA1507 S,T

9. THERMO (R) P.C BOARD

Ref. No.	Part No.	Description
TR154	*ET-378524J	TR 2SC3383 S,T,U
TR155	*ET-352726	TR 2SA1392 T,U
TR156	*ET-403526J	TR 2SC3902 S,T
TR157	*ET-403527J	TR 2SA1507 S,T

10. INPUT P.C BOARD

Ref. No.	Part No.	Description
IC1	EI-360043	IC M5220P
J1	EJ-364546	PIN J YKC21-0070A P 2P
J2	EJ-390102J	PIN J YKC21-0045A 6P
J3	EJ-415133J	PIN J YKC21-0071A 4P
J5	EJ-415133J	PIN J YKC21-0071A 4P
J6	EJ-415133J	PIN J YKC21-0071A 4P
L1	EO-418469J	COIL FIX 3 ZJY51R5-2PB
L51	EO-418469J	COIL FIX 3 ZJY51R5-2PB
SW1	EJ-415134J	SW SLIDE SSSU04 2-04-02S
TR1	ET-360749	TR FET 2SK170 BL
TR2	ET-360749	TR FET 2SK170 BL
TR51	ET-360749	TR FET 2SK170 BL
TR52	ET-360749	TR FET 2SK170 BL

11. REC SELECTOR P.C BOARD

Ref. No.	Part No.	Description
D101	ED-301911	D SILICON H DS448 [AM-69]
D151	ED-301911	D SILICON H DS448 [AM-69]
D181	*ED-330219	D ZENER H HZ20-2L
D182	*ED-330219	D ZENER H HZ20-2L
D183	*ED-346567	D ZENER H HZ16-1L
D184	*ED-346567	D ZENER H HZ16-1L
D185	ED-301911	D SILICON H DS448
D186	ED-301911	D SILICON H DS448
D187	*ED-330219	D ZENER H HZ20-2L [AM-69]
D188	*ED-330219	D ZENER H HZ20-2L [AM-69]
IC101	EI-403530J	IC LC7822N
TR101	ET-394735J	TR 2SC3792 T05
TR102	ET-394735J	TR 2SC3792 T05
TR103	ET-394735J	TR 2SC3792 T05
TR104	ET-394735J	TR 2SC3792 T05
TR105	ET-394735J	TR 2SC3792 T05
TR106	ET-337759	TR FET 2SK246 GR [AM-69]
TR107	ET-337759	TR FET 2SK246 GR [AM-69]
TR108	ET-394735J	TR 2SC3792 T05 [AM-69]
TR151	ET-394735J	TR 2SC3792 T05
TR152	ET-394735J	TR 2SC3792 T05
TR153	ET-394735J	TR 2SC3792 T05
TR154	ET-394735J	TR 2SC3792 T05
TR155	ET-394735J	TR 2SC3792 T05
TR156	ET-337759	TR FET 2SK246 GR [AM-69]
TR157	ET-337759	TR FET 2SK246 GR [AM-69]
TR158	ET-394735J	TR 2SC3792 T05 [AM-69]
TR181	ET-354414	TR DTC144ES [AM-69]
TR182	ET-354415	TR DTA144ES [AM-69]
TR183	ET-415140J	TR DTA115TS T05 [AM-69]
TR184	ET-354414	TR DTC144ES [AM-69]

12. INPUT SW P.C BOARD

Ref. No.	Part No.	Description
D201	ED-346530	D ZENER H HZ6C3L
FR201	*ER-401039J	R FUSE V T05 ERD2FCV 1/4W 4R7J
IC201	EI-330352	IC BA6109
SW201-A	EV-415136J	SW.SPE.ROTARY SRBAA47 02-07N [AM-59]
SW201-B	ES-415137J	SW SPE.ROTARY SRBAA48 02-08N [AM-69]

13. SOURCE DIRECT SW P.C BOARD

Ref. No.	Part No.	Description
SW250	ES-415099J	SW ROTARY SRBV22 02-02N

14. TONE P.C BOARD

Ref. No.	Part No.	Description
D301	*ED-330218	D ZENER H HZ15-2L
D302	*ED-330219	D ZENER H HZ20-2L
D303	*ED-330219	D ZENER H HZ20-2L
D304	ED-330218	D ZENER H HZ15-2L
D305	*ED-330219	D ZENER H HZ20-2L
D306	*ED-330219	D ZENER H HZ20-2L
D307	ED-624903	D SILICON H 1S2473
D308	ED-624903	D SILICON H 1S2473
D309	ED-624903	D SILICON H 1S2473
IC301	EI-393323J	IC M5218AL-771
IC302	EI-348785	IC M5220L
RL301	EQ-400957J	RELAY SIG RY12W-OH-K 2TR 12V
SW301	ES-415120J	SW PUSH SPEC31 3THROW *
SW302	ES-415100J	SW ROTARY SRBV14 01-04N
TR301	ET-338244	TR 2SA1207 R,S
TR302	*ET-338244	TR 2SA1207 R,S
TR303	*ET-348830	TR 2SC2909 S,T
TR304	*ET-348830	TR 2SC2909 S,T
TR305	ET-348830	TR 2SC2909 S,T
TR306	*ET-348830	TR 2SC2909 S,T
TR307	*ET-338244	TR 2SA1207 R,S
TR308	*ET-338244	TR 2SA1207 R,S
TR309	ET-397160J	TR 2SC3330 R,S,T,U,V
TR310	ET-397160J	TR 2SC3330 R,S,T,U,V
VR301	EV-401270J	VR ROTARY RK16312 B103X2
VR302	EV-401270J	VR ROTARY RK16312 B103X2
VR303	EV-416950J	VR ROTARY RK1631220 SPL W104 UP

15. REC OUT SW P.C BOARD

Ref. No.	Part No.	Description
SW401-A	ES-415126J	SW ROTARY SRBV17 01-07N [AM-59]
SW401-B	ES-415138J	SW ROTARY SRBV18 01-08N [AM-69]

16. VOLUME P.C BOARD

Ref. No.	Part No.	Description
D501	ED-301911	D SILICON H DS448
TR501	ET-353899	TR 2SA1317 S,T,U
TR502	ET-397160J	TR 2SC3330 R,S,T,U,V
TR503	ET-353899	TR 2SA1317 S,T,U
TR504	ET-397160J	TR 2SC3330 R,S,T,U,V
VR501-A	EV-415032M	VR SPL EUWM HD003 B15 B104X2 [AM-59]
VR501-B	EV-415139J	VR SPL RK18112MC B104X2 [AM-69]

17. PRIMARY P.C BOARD

Ref. No.	Part No.	Description
J601	EJ-415050J	SOCKET OUT M1882 3P
L601	*EO-332116	COIL FIX 2 103AK-006A 2R2K
L602	*EO-332116	COIL FIX 2 103AK-006A 2R2K
F1	*EF-405403J	FUSE S506 T 250V 5.00A

18. SUB TRANS P.C BOARD

Ref. No.	Part No.	Description
C701	*EC-389414J	C CE V DE7090 B102K 400AC
D701	*ED-511907	D SILICON 1N4002 100/1.0A
D702	*ED-511907	D SILICON 1N4002 100/1.0A
D703	*ED-511907	D SILICON 1N4002 100/1.0A
D704	*ED-511907	D SILICON 1N4002 100/1.0A
D705	ED-301911	D SILICON H DS448
D706	ED-301911	D SILICON H DS448
D707	ED-624903	D SILICON H 1S2473
D709	*ED-346530	D ZENER H HZ6C3L
RL701	*EQ-415055J	RELAY POW VS-6MB 1NO 6V
T701	*BT-415037M	TRANS POW A1030S-EV
TR701	*ET-376880	TR 2SD1266 P
TR702	ET-352726	TR 2SA1392 T,U
TR703	ET-378524J	TR 2SC3383 S,T,U
TR704	ET-378524J	TR 2SC3383 S,T,U

19. SYSCON P.C BOARD

Ref. No.	Part No.	Description
C802	EC-368118	C DBL LAYER EECS5R5H 224 5.5DC
D801	ED-301911	D SILICON H DS448
D802	ED-301911	D SILICON H DS448
D803	ED-307572	D SILICON H 1S5131
D804	ED-415085J	D LED SLR-33VC3F RED
D805	ED-624903	D SILICON H 1S2473 [AM-69]
D806	ED-624903	D SILICON H 1S2473 [AM-69]
D807	ED-403987J	D LED SLR33MC3F GREEN [AM-69]
D808	ED-403987J	D LED SLR33MC3F GREEN [AM-69]
D809	ED-403987J	D LED SLR33MC3F GREEN [AM-69]
D810	ED-405359J	D LED SEL2915A C,D ORANGE [AM-69]
D811	ED-405359J	D LED SEL2915A C,D ORANGE [AM-69]
D812	ED-405359J	D LED SEL2915A C,D ORANGE [AM-69]
IC801	EI-416800J	IC LC66404A-4B67 A2075-1
TR801	ET-353897	TR DTC114ES
TR802	ET-354365	TR DTC114YS
TR803	ET-369248	TR DTA114YS
TR804	ET-397160J	TR 2SC3330 R,S,T,U,V
TR805	ET-353899	TR 2SA1317 S,T,U [AM-69]
TR806	ET-354414	TR DTC144ES [AM-69]
TS801	ES-394427J	SW TACT SOR-133HS T05 [AM-69]
TS802	ES-394427J	SW TACT SOR-133HS T05 [AM-69]
TS803	ES-394427J	SW TACT SOR-133HS T05 [AM-69]
X801	EI-382875J	OSC CE CST4.00MGW 4MHZ

20. POWER SW P.C BOARD

Ref. No.	Part No.	Description
D851	ED-415085J	D LED SLR-33VC3F RED
D852	ED-403987J	D LED SLR33MC3F GREEN
D853	ED-403987J	D LED SLR33MC3F GREEN
PH851	ET-403432J	DETECTOR SPS-420-1
ST851	ES-394427J	SW TACT SOR-133HS T05

21. DAC P.C BOARD

Ref. No.	Part No.	Description
D1	ED-344280	D SILICON H GMA-01-FY2 F05
D2	ED-344280	D SILICON H GMA-01-FY2 F05
D3	ED-344280	D SILICON H GMA-01-FY2 F05
D4	*ED-346525	D ZENER H HZ6A3L
D5	*ED-346525	D ZENER H HZ6A3L
D6	*ED-343410	D ZENER H HZ6A1L
D7	ED-344280	D SILICON H GMA-01-FY2 F05
FL1	EH-385978J	FILTER EMI EXC-ELSR35T T05
FL2	EH-385788J	FILTER EMI EXC-ELSA35
IC1	EI-360040J1	IC TC74HCU04AP
IC2	EI-390063J	IC PD0037
IC3	EI-403437J	IC SM5840AP
IC4	EI-412415J	IC PCM69AP-J
IC5	*EI-362587J1	IC M5238AL
IC6	*EI-362587J1	IC M5238AL
J3	EJ-390086J	PIN J T6180-BAAA ORANGE 2P
J4	EJ-394490J	SOCKET OPTICAL GP1F32T
J5	EJ-394459J	SOCKET OPTICAL GP1F32R
L1	EO-403342J	COIL FIX 1 LAP02 F05 4R7K
TR1	ET-353897	TR DTC114ES
TR2	ET-354414	TR DTC144ES
TR3	ET-353897	TR DTC114ES
TR4	*ET-349705	TR 2SC2320 E,F,G
TR5	*ET-349705	TR 2SC2320 E,F,G
TR7	ET-354414	TR DTC144ES
TR8	ET-356336	TR DTA114ES

22. FINAL ASSEMBLY BLOCK

Ref. No.	Part No.	Description
1-A	SP-415341M1	PANEL REAR AM-59 (E) (SG)
1-B	SP-415365M1	PANEL REAR AM-69 (E) (SG)
2	ZS-385394J	ST BID30X06STL COP E.LOK C.PK4
3	ZS-394412J	BT BID30X08STL BZN PROJECTION
4	*EW-408724M	AC CORD200 SE1H03VVH2F VHR3N E
5	EJ-329610	TERMINAL W/SCREW UB-0067 L 1P
6-A	*BT-415117M1	TRANS POW A2077 EV [AM-59][T1]
6-B	*BT-415118M1	TRANS POW A2078 EV [AM-69][T1]
7	ZS-346742	ST BID40X08STL CMT CUP
8	ZW-410640J	SW40STL CMT
9	ZS-358936	ST BID30X06STL CMT
10	SB-415182M	BUTTON POWER (SG)
11	SK-415338M	KNOB SELECTOR (SG)
12	SK-402898J	BUTTON PUSH-B
13	SZ-407213J	FELT
14	SA-384105J	FOOT ROUND SHAPED (N)
15	ZS-304021	ST BID40X12STL CMT
16	SK-415178M	KNOB SELECTOR (SG)
17	SK-415180M	KNOB TONE (SG)
18	SK-415349J	KNOB VOLUME PART
19	SP-415469M1	COVER UPPER (1) (SG)
20	ZS-389964J	ST BID30X08STL COP E.LOK C.PK4
21	ZS-404225J	ST BID40X08STL BZN
22-A	SP-415336J	PANEL FRONT AM-59
22-B	SP-415356J	PANEL FRONT AM-69
23	ZW-381273J	SPACER
24	SE-415347M	FILTER REMOCON (SG)
25	SE-415340M	ESCUTCHEON FRONT (SG)
26	SM-365756C	NAME PLATE AKAI (2)
27	SM-368416B	NAME PLATE DIGITAL (1) B [AM-69]
28	SE-410963M	LENS LED (SG)
29	SB-415339J	BUTTON DIGITAL [AM-69]
30	SE-373237J1	LENS POW
31	SE-373256	CASE LED
32	ZW-698308	RV NYL30X055 BL
33	EZ-371605	BUSH CORD 2271
34	ZS-389961J	BT BID30X14STL COP CLEAR CUP
35	ZW-403334	SW30STL CMT
36	ZS-361450	ST BID30X10STL CMT
37	ZS-371016	ST BID30X14STL CMT
38	EZ-403425J	INSULATOR A *A2069

NOTE:

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

23. ACCESSARY

Ref. No.	Part No.	Description
1-A	AX-415115M	REMOCON RC-S59
1-B	AX-415116M	REMOCON RC-S69

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Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
AX415115M	23-1-A	ED348990	4-D105	EJ342935	6-TM301	ER704153	5-R223
AX415116M	23-1-B	ED348990	4-D106	EJ364546	10-J1	ES394427J	19-TS801
BAA2077T020A	2-1-A	ED348990	4-D107	EJ390086J	21-J3	ES394427J	19-TS802
BAA2077T020B	2-1-B	ED348990	4-D108	EJ390102J	10-J2	ES394427J	19-TS803
BAA2077T030A	2-2-A	ED348990	4-D109	EJ391132J	7-J601	ES394427J	20-ST851
BAA2077T030B	2-2-B	ED348990	4-D155	EJ394459J	21-J5	ES415099J	13-SW250
BAA2077T040A	2-3-A	ED348990	4-D156	EJ394490J	21-J4	ES415100J	14-SW302
BAA2077T040B	2-3-B	ED370990	5-D209	EJ415050J	17-J601	ES415120J	14-SW301
BAA2078T050A	2-4	ED370990	5-D210	EJ415133J	10-J3	ES415126J	15-SW401-A
BT415037M	18-T701	ED370990	5-D214	EJ415133J	10-J5	ES415137J	12-SW201-B
BT415117M1	22-6-A	ED370990	5-D215	EJ415133J	10-J6	ES415138J	15-SW401-B
BT415118M1	22-6-B	ED370990	5-D216	EJ415134J	10-SW1	ET322353	3-TR1
EC368118	19-C802	ED370990	5-D217	EO332116	4-L101	ET322353	3-TR51
EC381263J	4-C101	ED377933	5-D205	EO332116	4-L151	ES415100J	11-TR106
EC381263J	4-C102	ED377933	5-D206	EO332116	17-L601	ET337759	11-TR107
EC389414J	18-C701	ED377933	5-D207	EO332116	17-L602	ET337759	11-TR156
ED301911	3-D1	ED377933	5-D208	EO403342J	21-L1	ET337759	11-TR157
ED301911	3-D2	ED379981J	5-D201	EO418469J	10-L1	ET338244	14-TR301
ED301911	3-D51	ED379981J	5-D202	EO418469J	10-L51	ET338244	14-TR302
ED301911	3-D52	ED379981J	5-D203	EQ400957J	14-RL301	ET338244	14-TR307
ED301911	11-D101	ED379981J	5-D204	EQ403529J1	4-RL101	ET338244	14-TR308
ED301911	11-D151	ED384278J	4-D101	EQ403529J1	4-RL102	ET345625	5-TR218
ED301911	11-D185	ED384278J	4-D102	EQ403529J1	4-RL103	ET345626	5-TR219
ED301911	11-D186	ED392651J	4-D181	EQ415055J	18-RL701	ET348830	14-TR303
ED301911	16-D501	ED392651J	4-D182	ER318248	4-FR101	ET348830	14-TR304
ED301911	18-D705	ED403987J	19-D807	ER318248	4-FR102	ET348830	14-TR305
ED301911	18-D706	ED403987J	19-D808	ER318248	4-FR151	ET348830	14-TR306
ED301911	19-D801	ED403987J	19-D809	ER318248	4-FR152	ET349705	21-TR4
ED301911	19-D802	ED403987J	20-D852	ER320528	5-FR221	ET349705	21-TR5
ED307572	4-D120	ED403987J	20-D853	ER320528	5-FR222	ET352726	5-TR211
ED307572	4-D121	ED405359J	19-D810	ER324186	4-R103	ET352726	5-TR214
ED307572	4-D122	ED405359J	19-D811	ER324186	4-R153	ET352726	5-TR215
ED307572	19-D803	ED405359J	19-D812	ER341493	4-FR107	ET352726	8-TR105
ED330218	14-D301	ED415085J	19-D804	ER341493	4-FR108	ET352726	9-TR155
ED330218	14-D304	ED415085J	20-D851	ER341493	4-FR157	ET352726	18-TR702
ED330219	11-D181	ED511907	18-D701	ER341493	4-FR158	ET353897	19-TR801
ED330219	11-D182	ED511907	18-D702	ER355214	4-R105	ET353897	21-TR1
ED330219	11-D187	ED511907	18-D703	ER355214	4-R155	ET353897	21-TR3
ED330219	11-D188	ED511907	18-D704	ER368226	4-R114	ET353899	16-TR501
ED330219	14-D302	ED624903	14-D307	ER368226	4-R115	ET353899	16-TR503
ED330219	14-D303	ED624903	14-D308	ER368226	4-R164	ET353899	19-TR805
ED330219	14-D305	ED624903	14-D309	ER368226	4-R165	ET354365	19-TR802
ED330219	14-D306	ED624903	18-D707	ER375108	3-R10	ET354414	11-TR181
ED343410	5-D213	ED624903	19-D805	ER375108	3-R13	ET354414	11-TR184
ED343410	21-D6	ED624903	19-D806	ER375108	3-R60	ET354414	19-TR806
ED343854	3-D7	EF405396J	5-F4-A	ER375108	3-R63	ET354414	21-TR2
ED343854	3-D8	EF405396J	5-F5-A	ER378517J	3-R16	ET354414	21-TR7
ED343854	3-D9	EF405397J	5-F4-B	ER378517J	3-R21	ET354415	11-TR182
ED343854	3-D10	EF405397J	5-F5-B	ER378517J	3-R66	ET356336	21-TR8
ED344280	21-D1	EF405403J	17-F1	ER378517J	3-R71	ET360749	10-TR1
ED344280	21-D2	EF415131J	5-F2	ER381265J	4-R109	ET360749	10-TR2
ED344280	21-D3	EF415131J	5-F3	ER381265J	4-R159	ET360749	10-TR51
ED344280	21-D7	EH385788J	21-FL2	ER381266J	4-R117	ET360749	10-TR52
ED346525	21-D4	EH385978J	21-FL1	ER381266J	4-R167	ET368047	3-TR2
ED346525	21-D5	EI330352	12-IC201	ER383007J	4-R110	ET368047	3-TR6
ED346530	12-D201	EI348785	14-IC302	ER383007J	4-R111	ET368047	3-TR7
ED346530	18-D709	EI354080	4-IC101	ER383007J	4-R112	ET368047	3-TR8
ED346557	5-D211	EI360040J1	21-IC1	ER383007J	4-R113	ET368047	3-TR52
ED346567	3-D3	EI360043	10-IC1	ER383007J	4-R160	ET368047	3-TR56
ED346567	3-D4	EI362587J1	21-IC5	ER383007J	4-R161	ET368047	3-TR57
ED346567	3-D53	EI362587J1	21-IC6	ER383007J	4-R162	ET368047	3-TR58
ED346567	3-D54	EI382875J	19-X801	ER383007J	4-R163	ET368047	4-TR101
ED346567	4-D114	EI390063J	21-IC2	ER400150J	4-R116	ET368047	4-TR102
ED346567	5-D218	EI393323J	14-IC301	ER400150J	4-R166	ET368047	4-TR151
ED346567	5-D219	EI393326J	3-IC1	ER401039J	12-FR201	ET368047	4-TR152
ED346567	11-D183	EI403437J	21-IC3	ER415143J	5-R208	ET368047	5-TR203
ED346567	11-D184	EI403530J	11-IC101	ER415149J	5-R201	ET368047	5-TR204
ED346570	4-D110	EI412415J	21-IC4	ER415149J	5-R202	ET368048	3-TR3
ED346570	4-D111	EI416800J	19-IC801	ER415150J	5-R212	ET368048	3-TR4
ED346570	4-D112	EJ329610	22-5	ER418459J	4-R181	ET368048	3-TR5

Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.	Part No.	Ref. No.
ET368048	3-TR10	SA384105J	22-14				
ET368048	3-TR53	SB415182M	22-10				
ET368048	3-TR54	SB415339J	22-29				
ET368048	3-TR55	SE373237J1	22-30				
ET368048	3-TR60	SE373256	22-31				
ET368048	4-TR103	SE410963M	22-28				
ET368048	4-TR113	SE415340M	22-25				
ET368048	4-TR153	SE415347M	22-24				
ET368048	5-TR201	SK402898J	22-12				
ET368048	5-TR202	SK415178M	22-16				
ET369248	19-TR803	SK415180M	22-17				
ET376880	5-TR207	SK415338M	22-11				
ET376880	18-TR701	SK415349J	22-18				
ET378524J	4-TR112	SM365756C	22-26				
ET378524J	4-TR116	SM368416B	22-27				
ET378524J	4-TR117	SP415336J	22-22-A				
ET378524J	4-TR118	SP415341M1	22-1-A				
ET378524J	4-TR119	SP415356J	22-22-B				
ET378524J	4-TR162	SP415365M1	22-1-B				
ET378524J	5-TR213	SP415469M1	22-19				
ET378524J	5-TR216	SZ407213J	22-13				
ET378524J	5-TR217	ZS304021	22-15				
ET378524J	5-TR220	ZS346742	22-7				
ET378524J	8-TR104	ZS358936	22-9				
ET378524J	9-TR154	ZS361450	22-36				
ET378524J	18-TR703	ZS371016	22-37				
ET378524J	18-TR704	ZS385394J	22-2				
ET394735J	11-TR101	ZS389961J	22-34				
ET394735J	11-TR102	ZS389964J	22-20				
ET394735J	11-TR103	ZS394412J	22-3				
ET394735J	11-TR104	ZS404225J	22-21				
ET394735J	11-TR105	ZW381273J	22-23				
ET394735J	11-TR108	ZW403334	22-35				
ET394735J	11-TR151	ZW410640J	22-8				
ET394735J	11-TR152	ZW698308	22-32				
ET394735J	11-TR153						
ET394735J	11-TR154						
ET394735J	11-TR155						
ET394735J	11-TR158						
ET397160J	14-TR309						
ET397160J	14-TR310						
ET397160J	16-TR502						
ET397160J	16-TR504						
ET397160J	19-TR804						
ET403432J	20-PH851						
ET403526J	8-TR106						
ET403526J	9-TR156						
ET403527J	5-TR212						
ET403527J	8-TR107						
ET403527J	9-TR157						
ET415051J	4-TR110						
ET415051J	4-TR111						
ET415051J	4-TR160						
ET415051J	4-TR161						
ET415053J	4-TR108						
ET415053J	4-TR109						
ET415053J	4-TR158						
ET415053J	4-TR159						
ET415140J	11-TR183						
ET415156J	5-TR205						
ET415158J	5-TR206						
EV401270J	14-VR301						
EV401270J	14-VR302						
EV416950J	14-VR303						
EV415032M	16-VR501-A						
EV415136J	12-SW201-A						
EV415139J	16-VR501-B						
EW408724M	22-4						
EZ371605	22-33						
EZ403425J	22-38						

ABBREVIATIONS (AMPLIFIER)

ABBREVIATION	EXPLANATION
A	Analog
AC	Alternating Current
AMP	AMPLifier
CD	Compact Disc
COM	COMMon
D	Digital
D/A	Digital to Analog
DAC	Digital to Analog Converter
DAT	Digital Audio Tape recorder
DC	Direct Current
GND	GrouND
L	Left
LED	Light Emitting Diode
MC	Moving Coil
MM	Moving Magnet
PCB	Printed Circuit Board
R	Right
REG	REGulator
REC	RECord
TR	TRansistor
SW	SWitch
V.AMP	Voltage AMPLifier
V.DISC	Video DISC
VR	Variable Resistance
VTR	Video Tape Recorder

AKAI ELECTRIC CO., LTD.

12-14, 2-Chome, Higashi-Kojiya, Ohta-ku, Tokyo, Japan
SERVICE DEPARTMENT TEL:Tokyo (3745)9884 TELEX:J26261
Printed No. 930409-A1-1200 Printed Date July 10, 1993

350 Printed in Japan

AKAI

MODEL **AM-59**

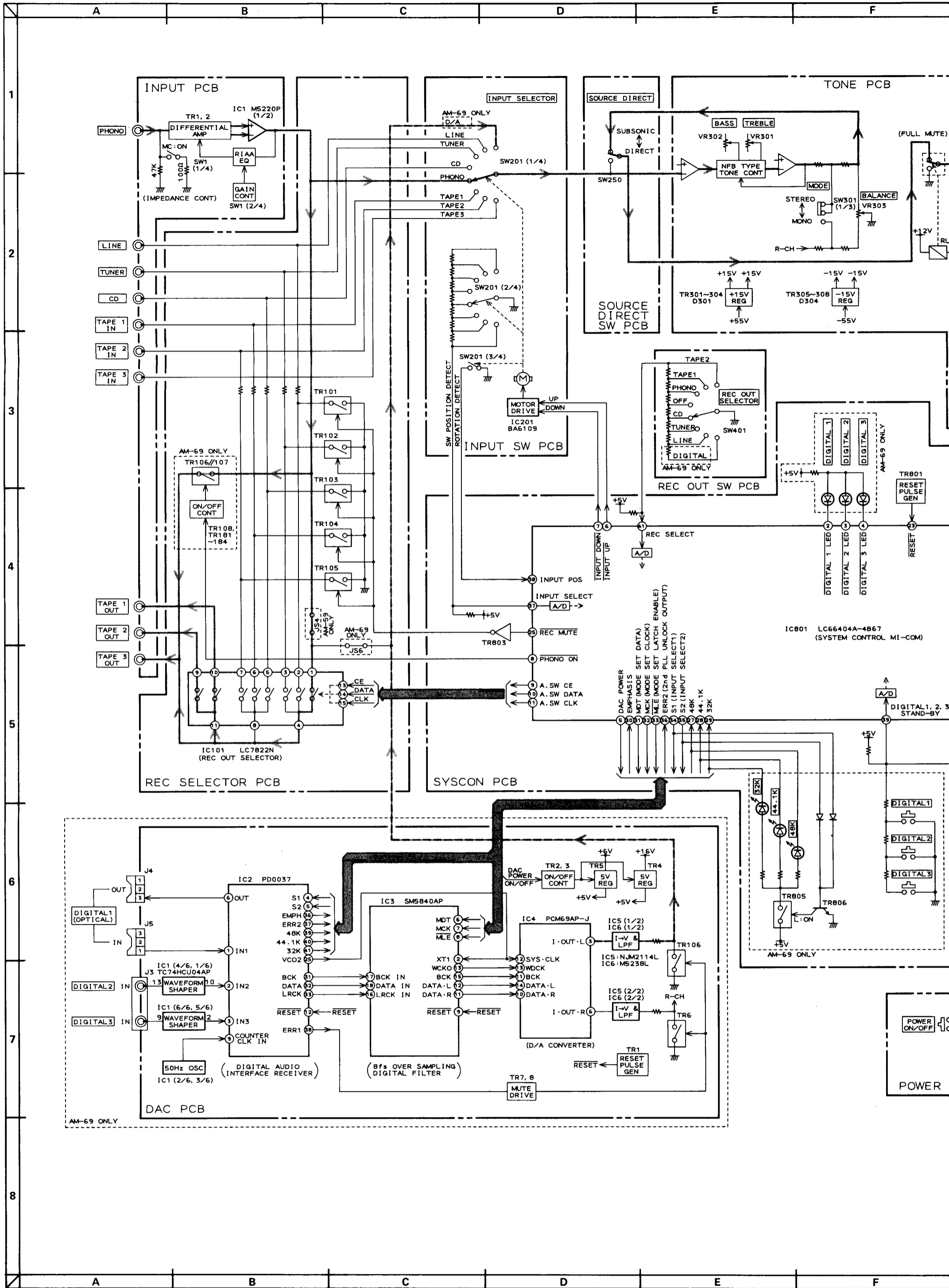
MODEL **AM-69**

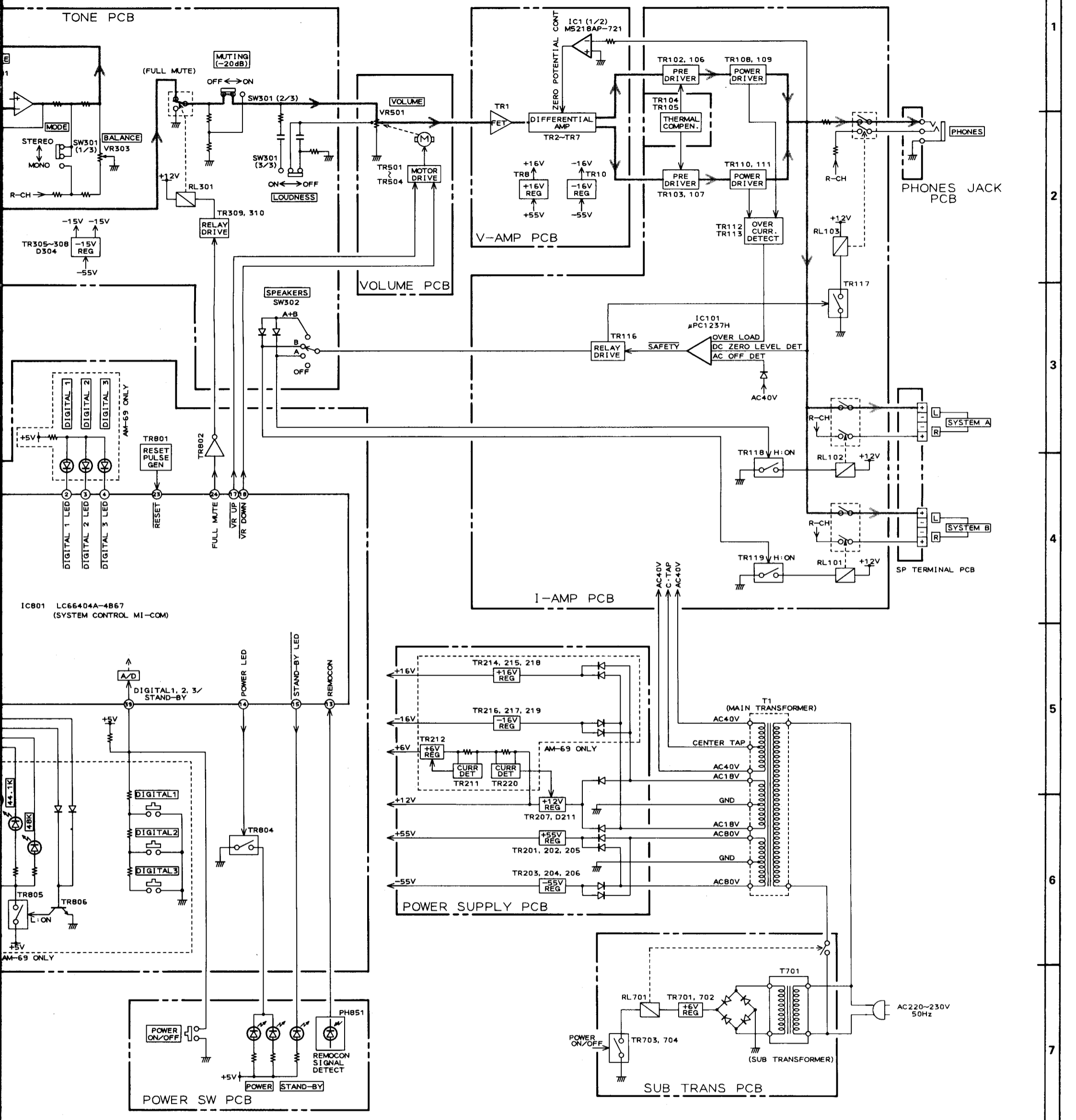
SCHEMATIC DIAGRAMS AND PC BOARDS

TABLE OF CONTENTS

1. BLOCK DIAGRAM	3
2. CONNECTION DIAGRAM	4
3. TONE AND OTHER PC BOARDS	5
4. SYSCON AND OTHER PC BOARDS	6
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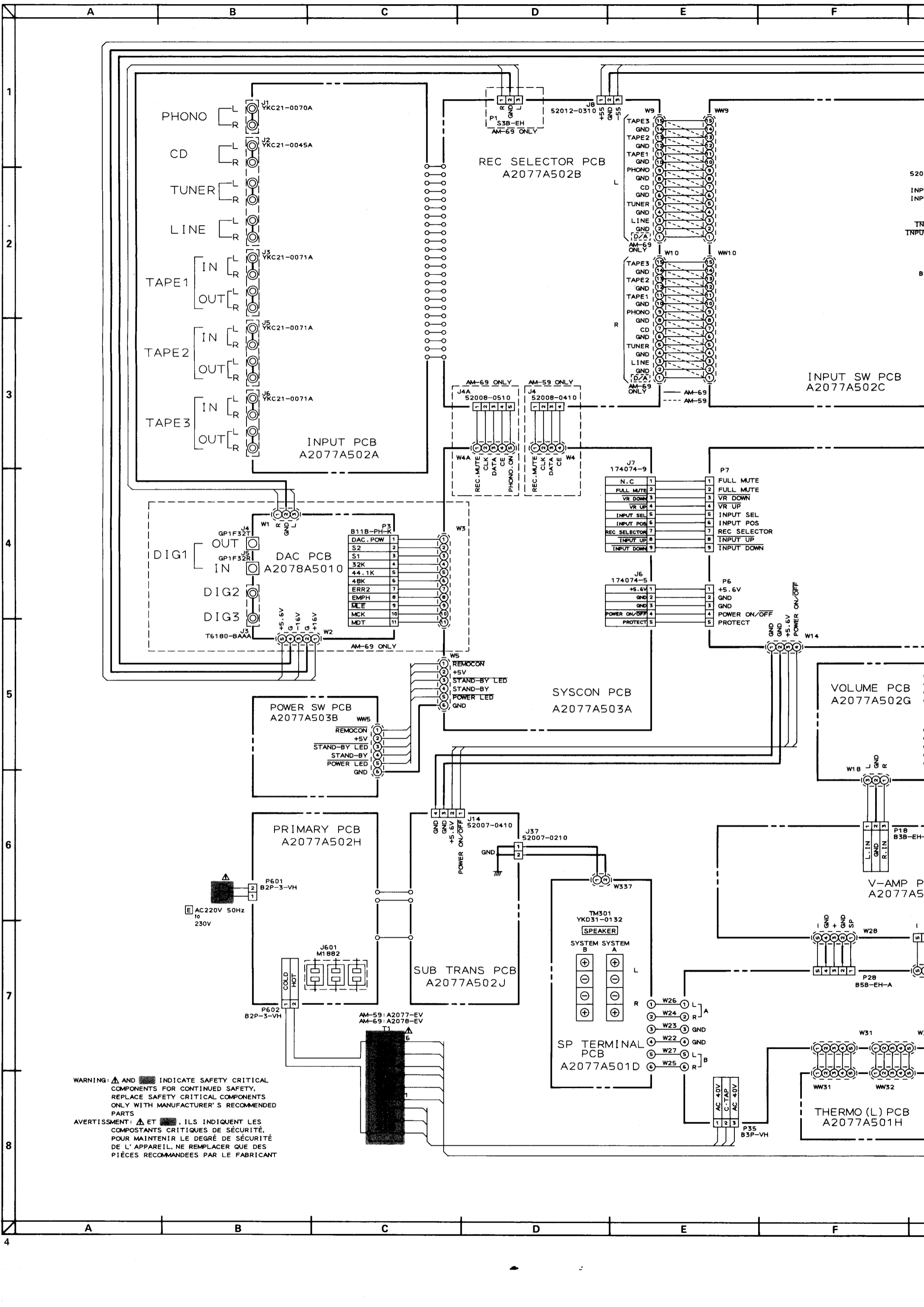
Use these schematic diagrams and PC boards together with the provided service manual.





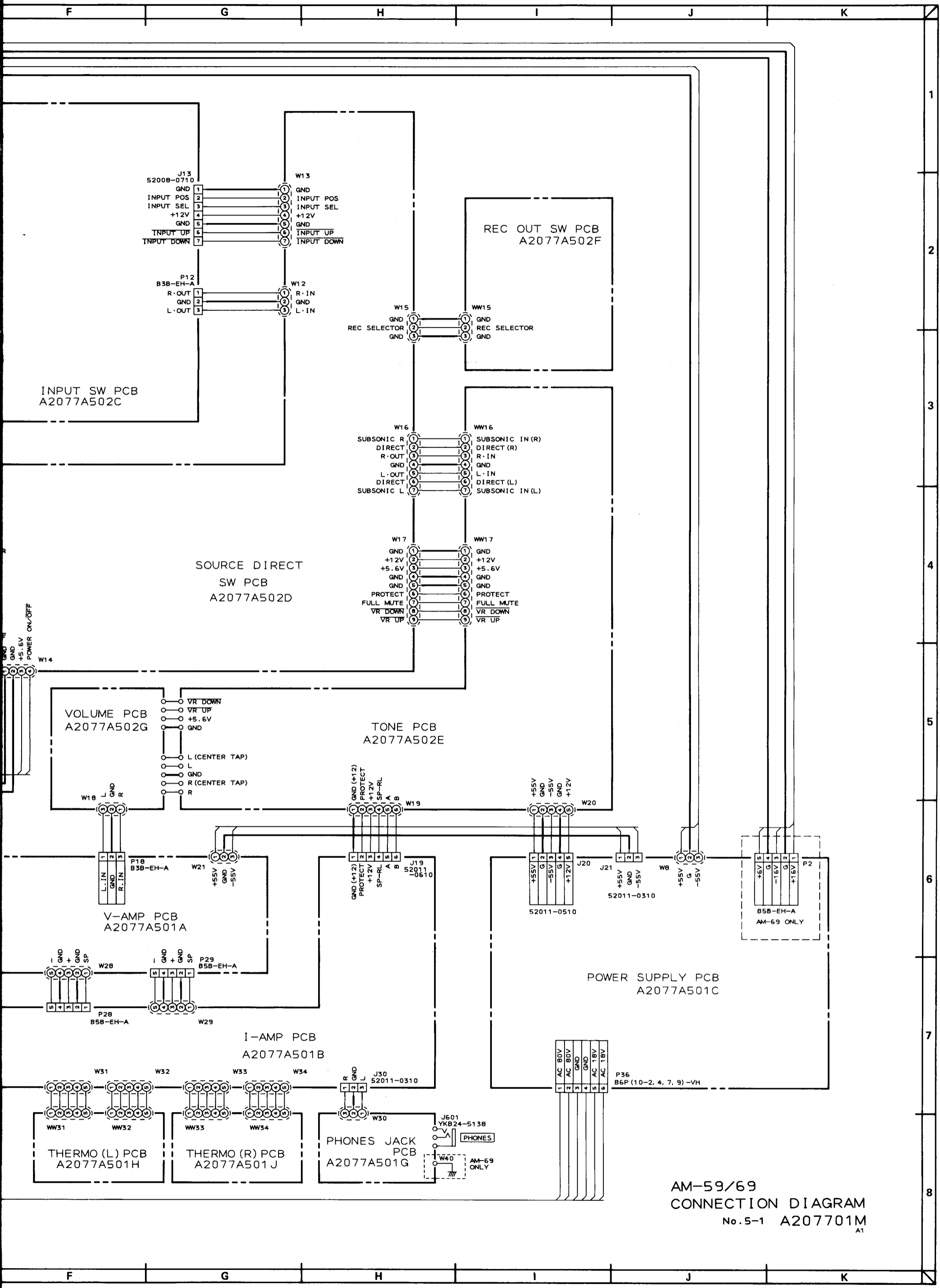
--- L-CH AUDIO SIGNAL LINE (PHONO)
 --- L-CH AUDIO SIGNAL LINE (D/A)

AM-59/69
 BLOCK DIAGRAM
 No. A207751M
 A1

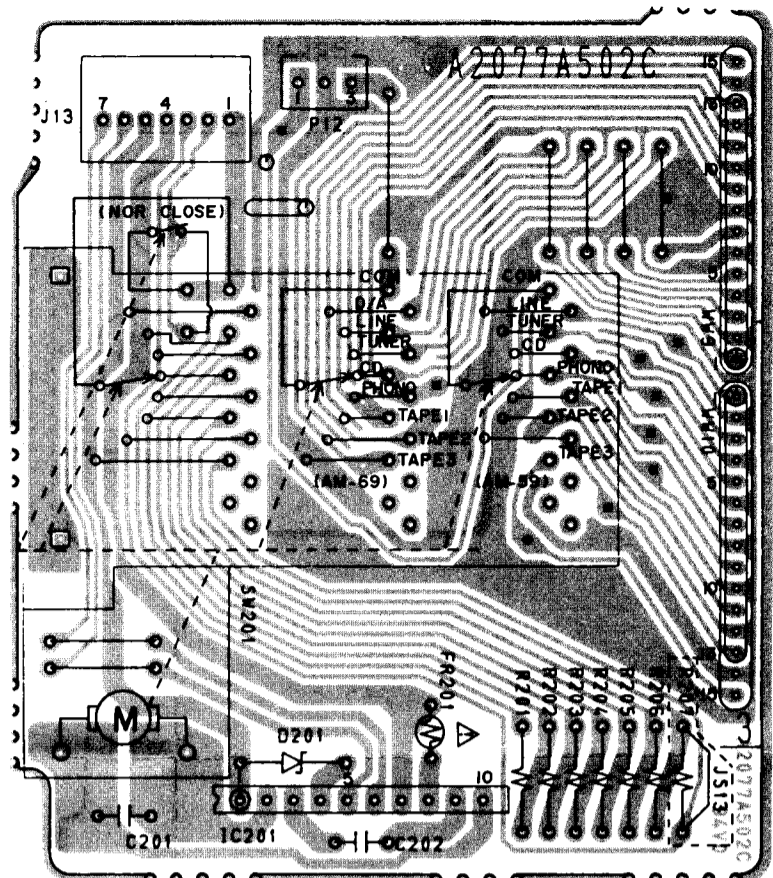


WARNING: **⚠** AND **■** INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: **⚠** ET **■** ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.



AM-59/69
 CONNECTION DIAGRAM
 No. 5-1 A207701M
 A1



INPUT SW PCB A2077A502C

PRINCIPAL PARTS LOCATION

TRANSISTORS

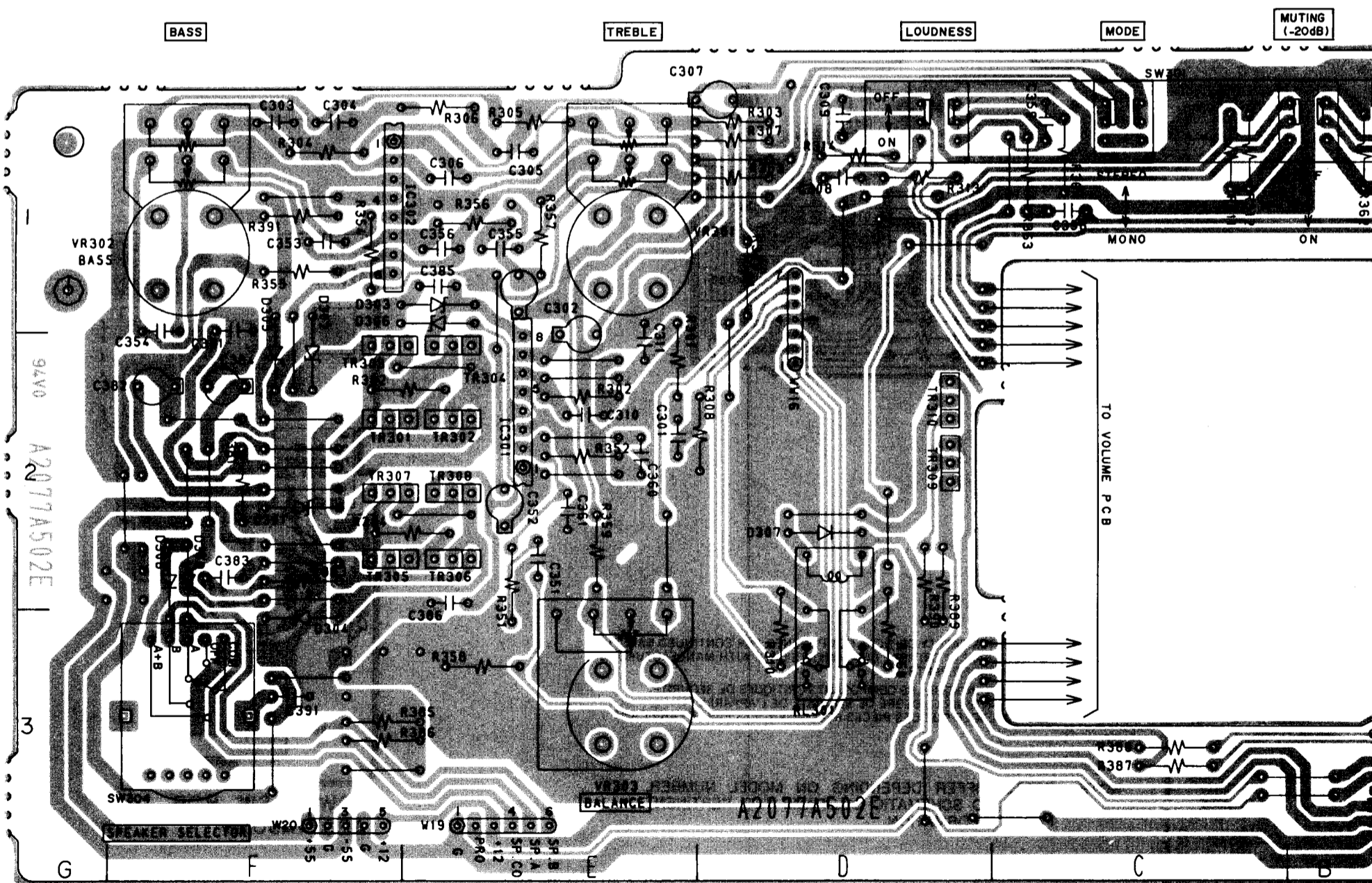
- TR301 E,F2
- TR302 E2
- TR303 E,F2
- TR304 E2
- TR305 E,F2
- TR306 E2
- TR307 E,F2
- TR308 E2
- TR309 D2
- TR310 D2

ICs

- IC301 E2
- IC302 E,F1

WIRES

- W19 E3
- W20 F3
- WW16 D1,2
- WW17 B3



TONE PCB A2077A502E

PRINCIPAL PARTS LOCATION

TRANSISTORS

TR1 G1,2
 TR2 G2
 TR51 F1,2
 TR52 F2
 TR101 C2,3
 TR102 C2,3
 TR103 C2,3
 TR104 C2,3
 TR105 C2,3
 TR106 C2
 TR107 C2
 TR108 C2
 TR151 C3
 TR152 C3

TR153 C3
 TR154 C3
 TR155 C3
 TR156 C3
 TR157 C3
 TR158 C4
 TR181 A1
 TR182 A1
 TR183 A1
 TR184 A1

ICs

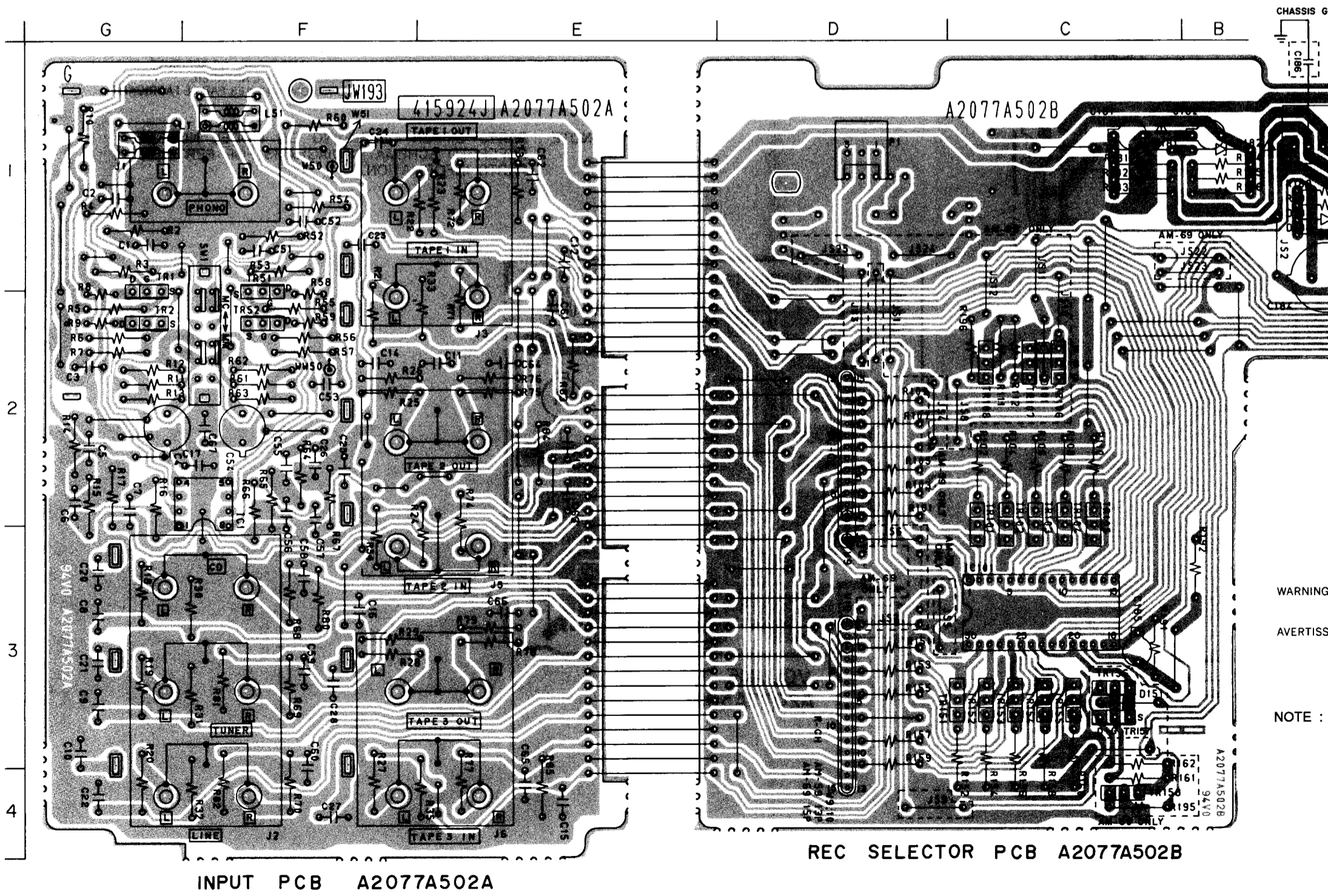
IC1 F2
 IC101 C3

CONNECTORS

J1 F,G1
 J2 E,G3,4
 J3 E,F1,2
 J4 A1
 J5 E,F2,3
 J6 E,F3,4
 J8 B1
 P1 D1

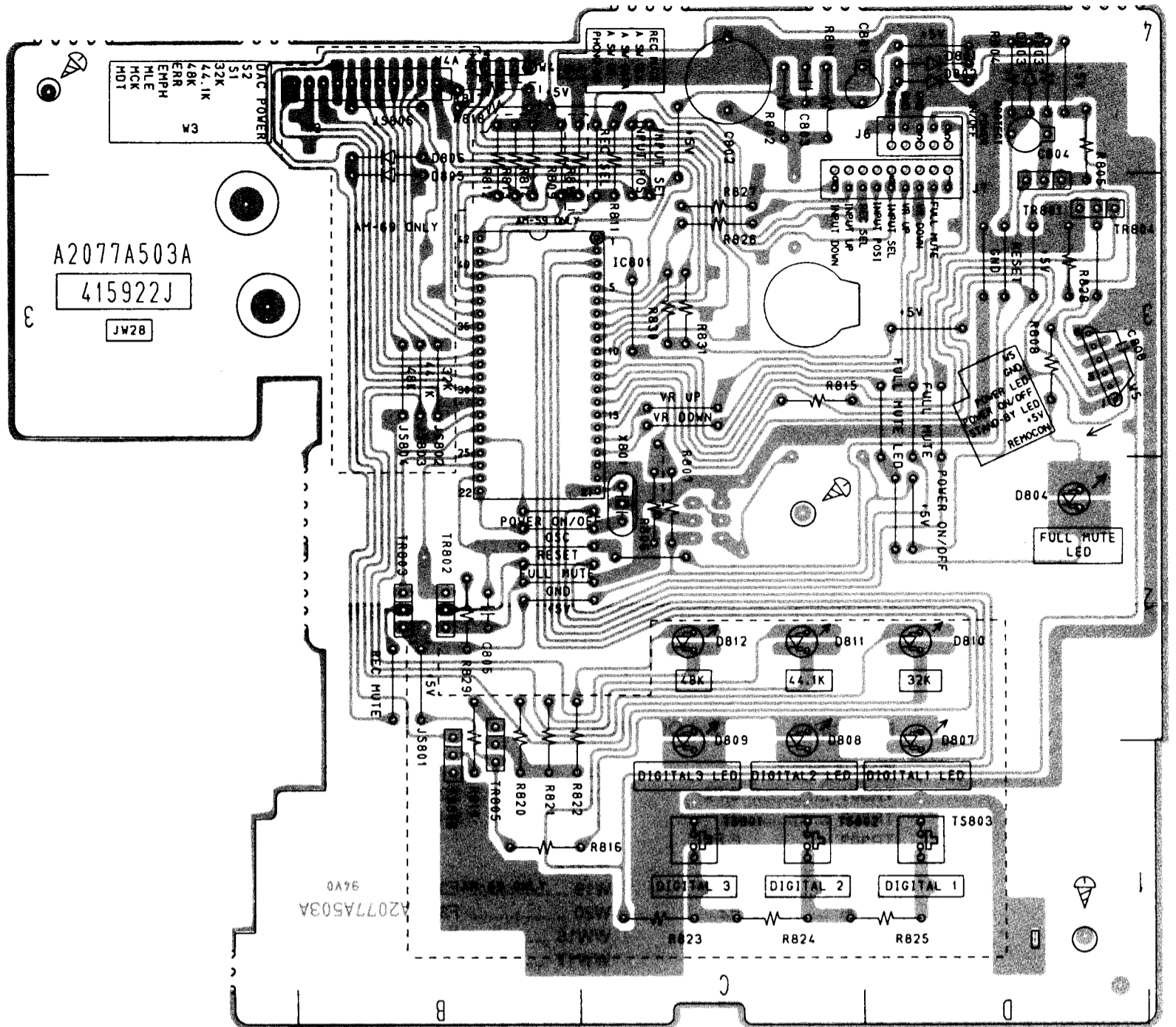
WIRES

W9 D2
 W10 D3
 W50 F1,2

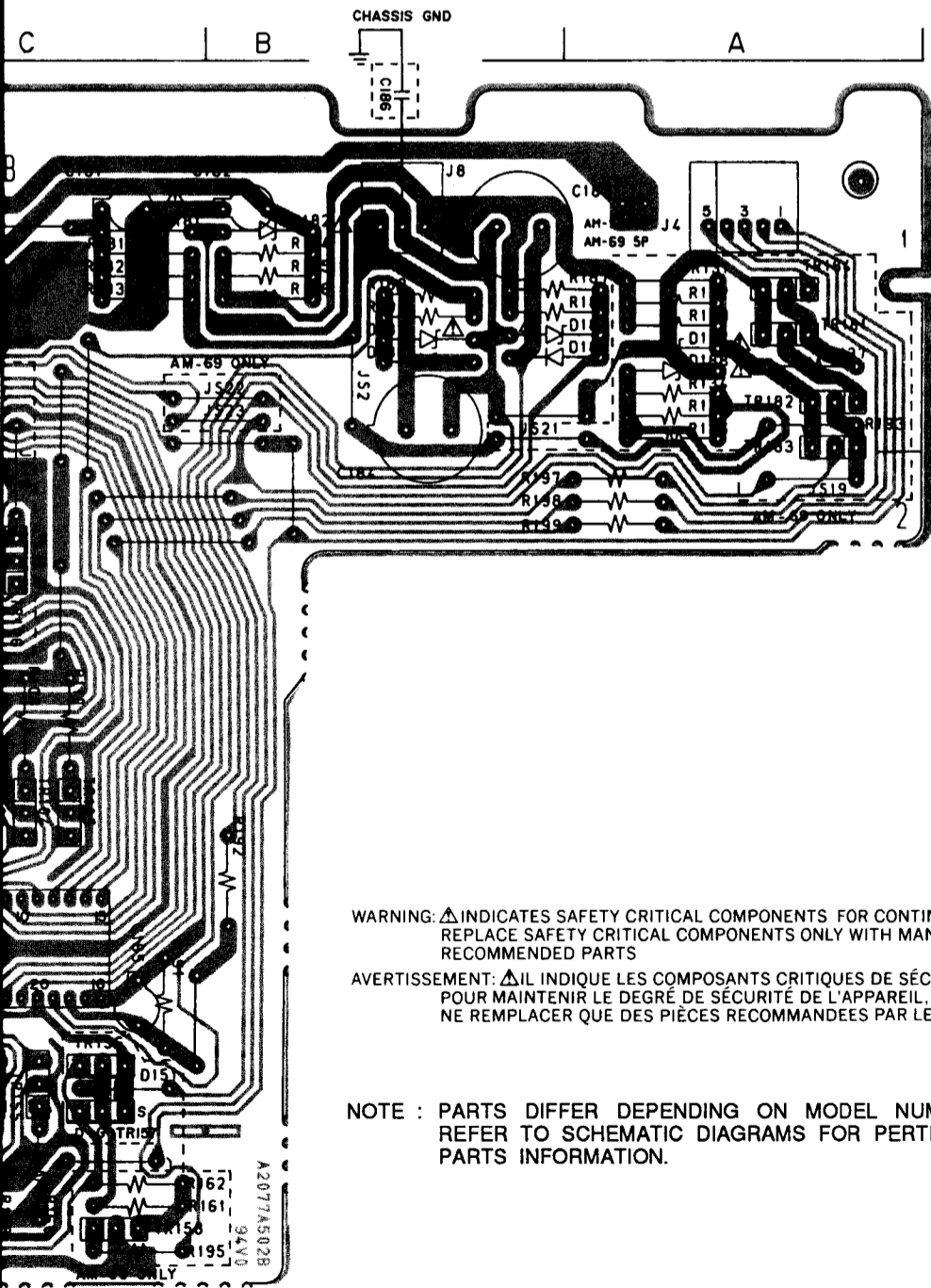


INPUT PCB A2077A502A

REC SELECTOR PCB A2077A502B



SYSCON PCB A2077A503A

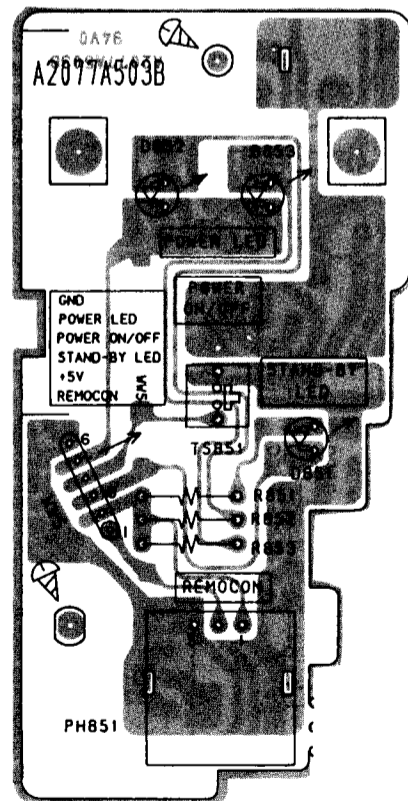


A2077A502B

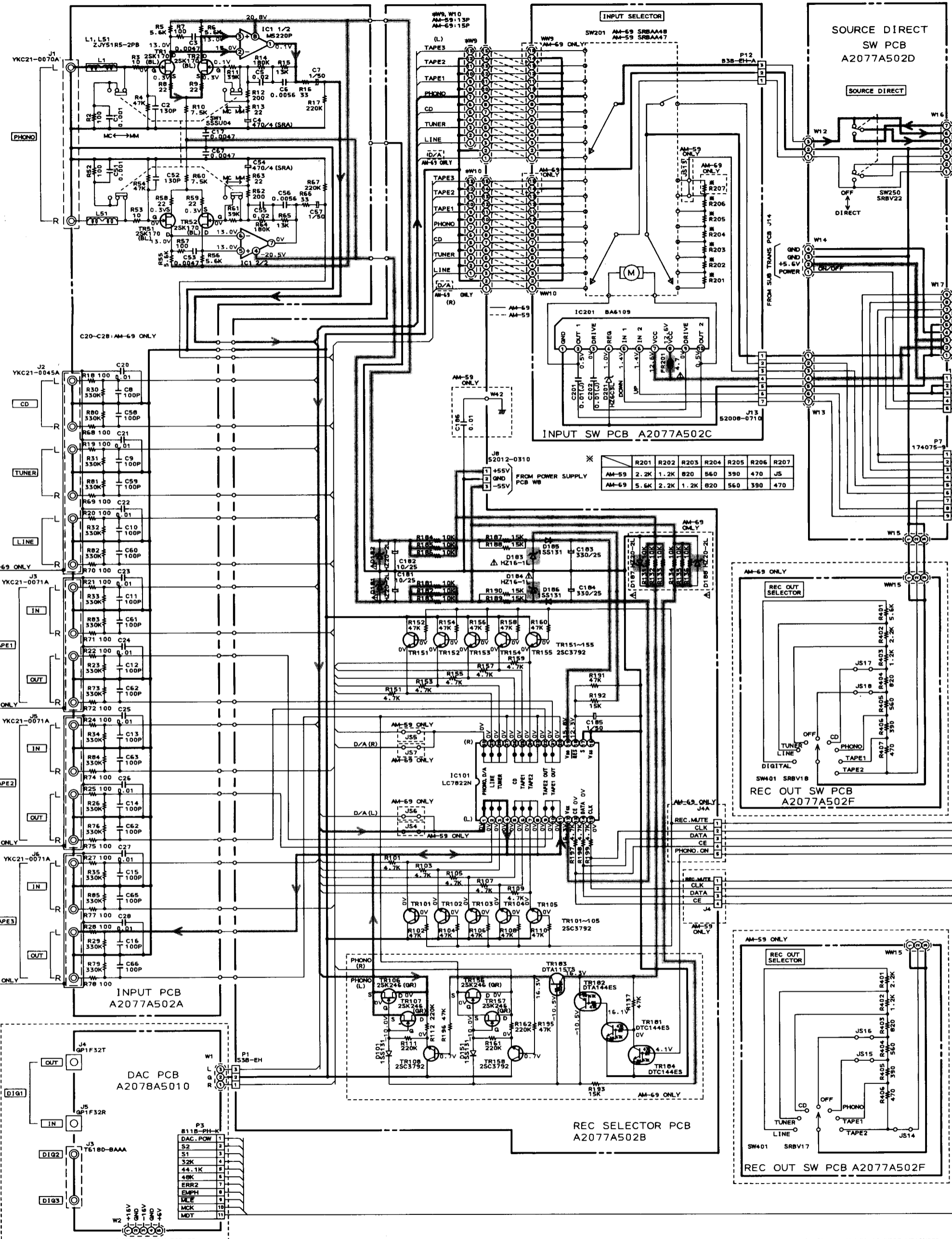
WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

NOTE: PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

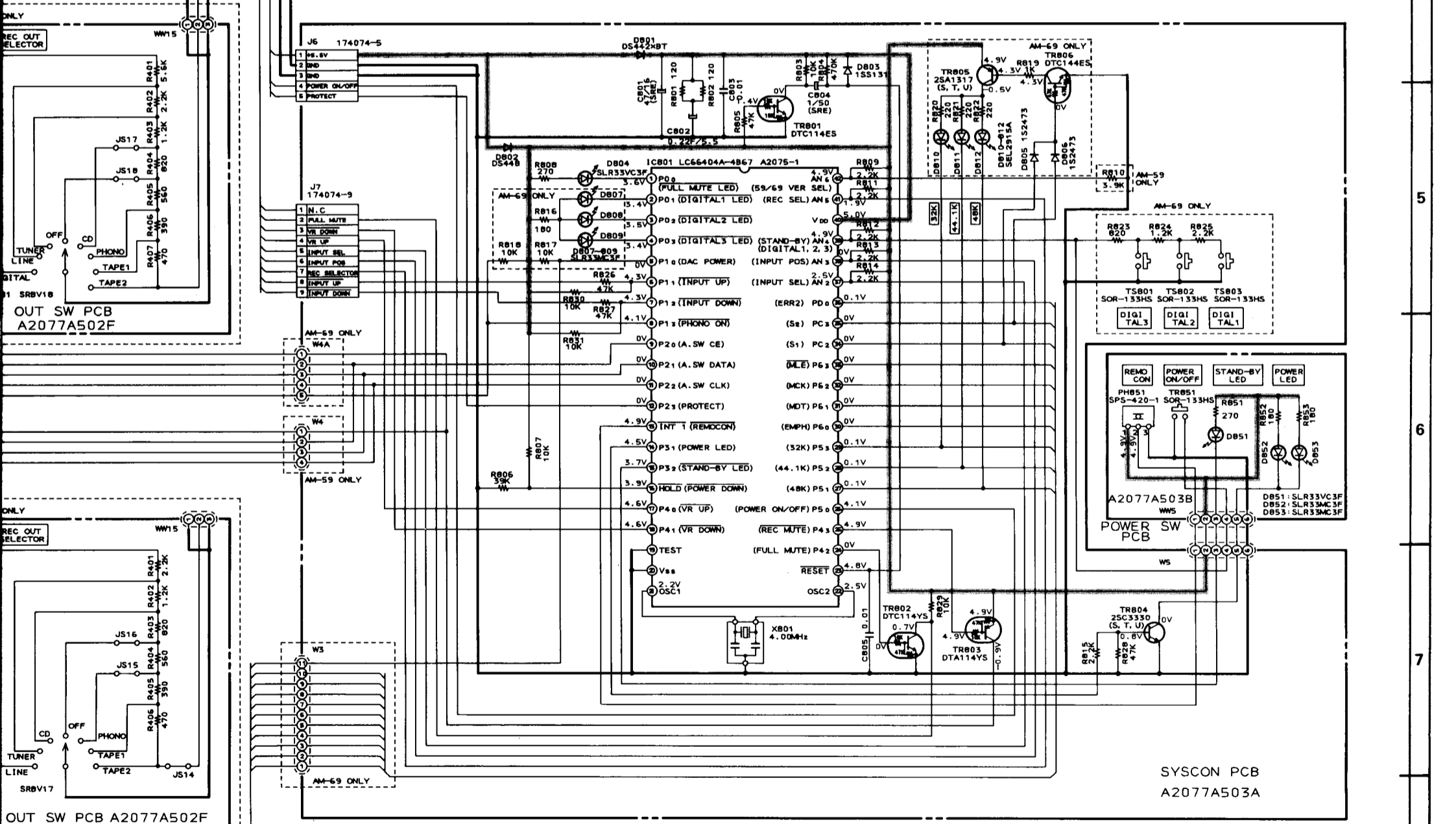
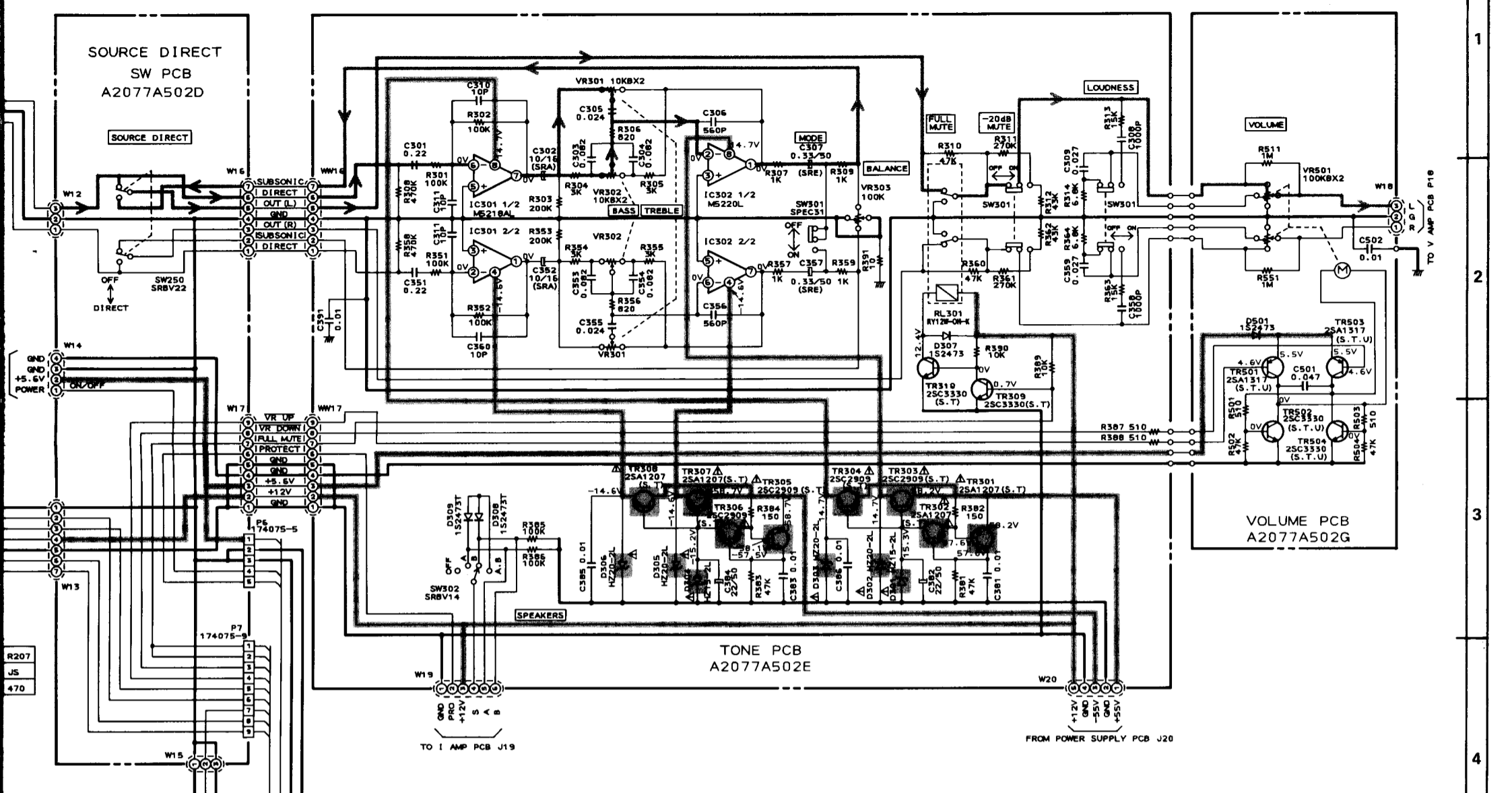


POWER SW PCB A2077A503B



B (POWER SUPPLY) LINE
L-CH AUDIO SIGNAL LINE

INDICATED VOLTAGES WERE MEASURED DURING THE FOLLOWING MODES.
*INPUT SELECTOR: CD
*REC OUT SELECTOR: OFF
*INPUT: NO SIGNAL

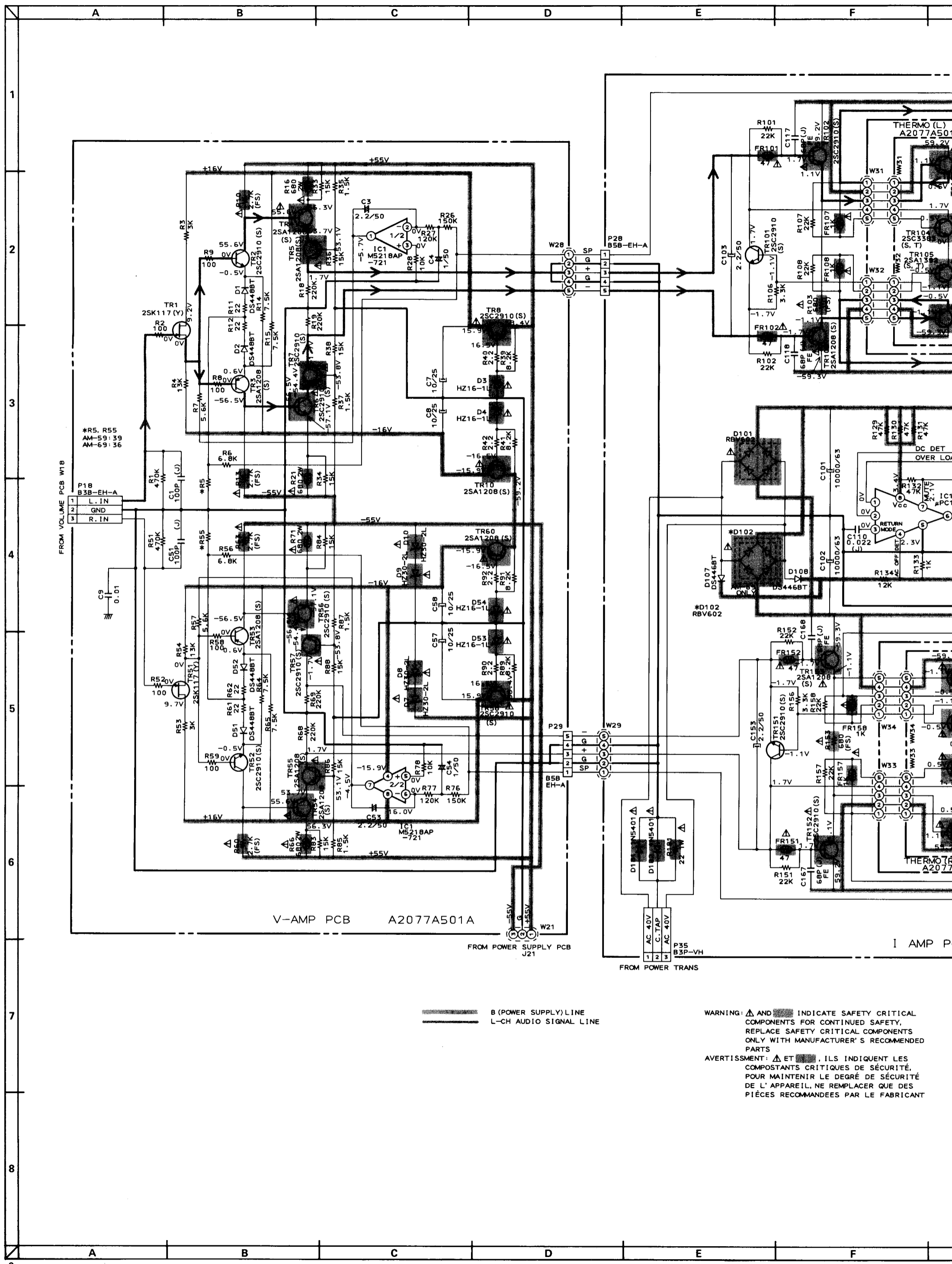


INDICATED VOLTAGES WERE MEASURED DURING THE FOLLOWING MODES.
 *INPUT SELECTOR: CD
 *REC OUT SELECTOR: OFF
 *INPUT: NO SIGNAL

WARNING: Δ AND \square INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
 AVERTISSEMENT: Δ ET \square ILS INDIQUENT LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

NOTE: UNLESS OTHERWISE SPECIFIED ALL RESISTORS IN OHMS (1/W/J) ALL CAPACITORS IN μ F (U) (P-PF) ALL ELECTROLYTIC CAPACITORS IN μ F/W (M)

AM-59/69
 PRE AMP & SYSCON
 SCHEMATIC DIAGRAM
 No. 5-2 A207702M
 A0



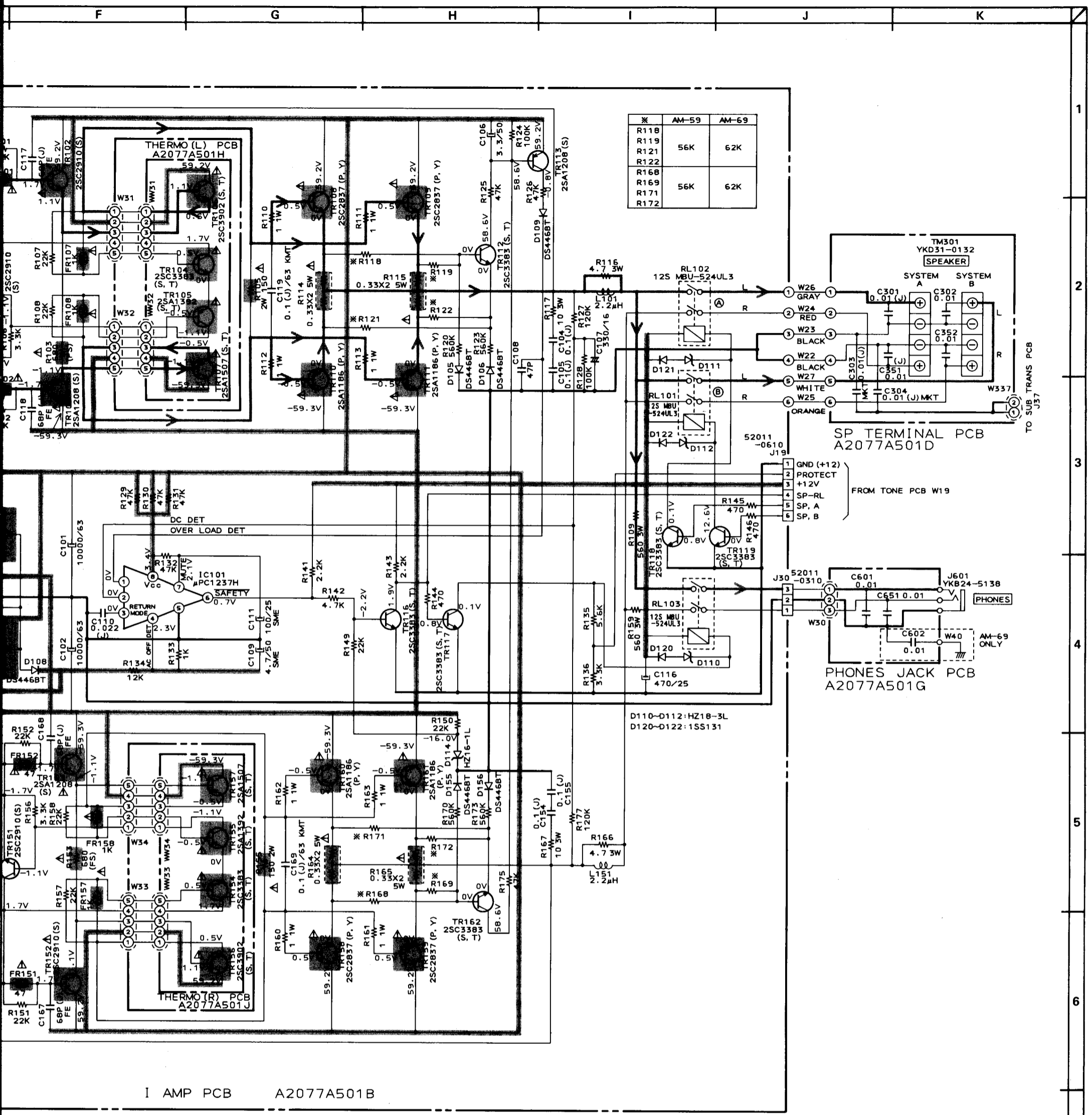
V-AMP PCB A2077A501A

B (POWER SUPPLY) LINE
 L-CH AUDIO SIGNAL LINE

WARNING: △ AND ■ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS
 AVERTISSEMENT: △ ET ■, ILS INDIQUENT LES COMPOSANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

1
2
3
4
5
6
7
8

A B C D E F



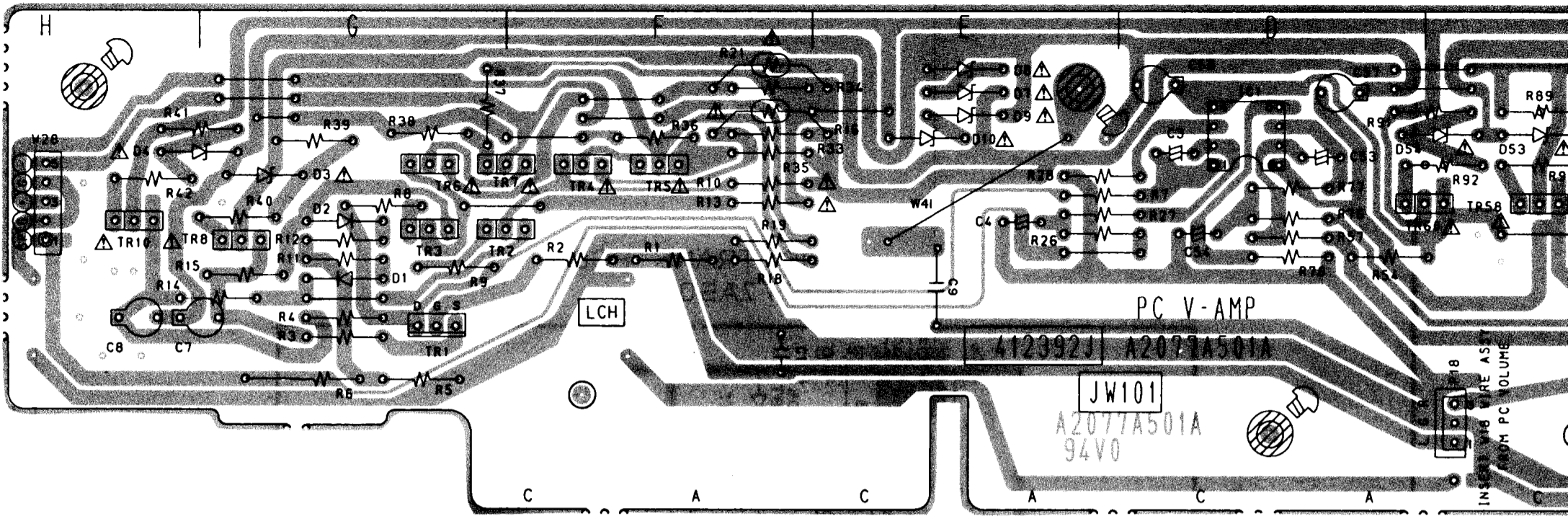
№	AM-59	AM-69
R118		
R119	56K	62K
R121		
R122		
R168		
R169	56K	62K
R171		
R172		

INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS WITH MANUFACTURER'S RECOMMENDED PARTS.

ET . ILS INDIQUENT LES COMPOSANTS CRITIQUES DE SÉCURITÉ. MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL. NE REMPLACER QUE DES COMPOSANTS RECOMMANDÉS PAR LE FABRICANT.

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN µF (P-PF) 50WV
ALL ELECTROLYTIC CAPACITORS IN µF/WV (M) AS-1

AM-59/69
POWER AMP
SCHEMATIC DIAGRAM
No. 5-3 A207703M
A1



V-AMP PCB A2077A501A

WARNING: Δ IND
REPL
RECO
AVERTISSEMENT
POUR
NE RE

PRINCIPAL PARTS LOCATION

ICs

IC101 A2

CONNECTORS

J19 D2
J30 E2
P28 A2
P35 C2

TRANSISTORS

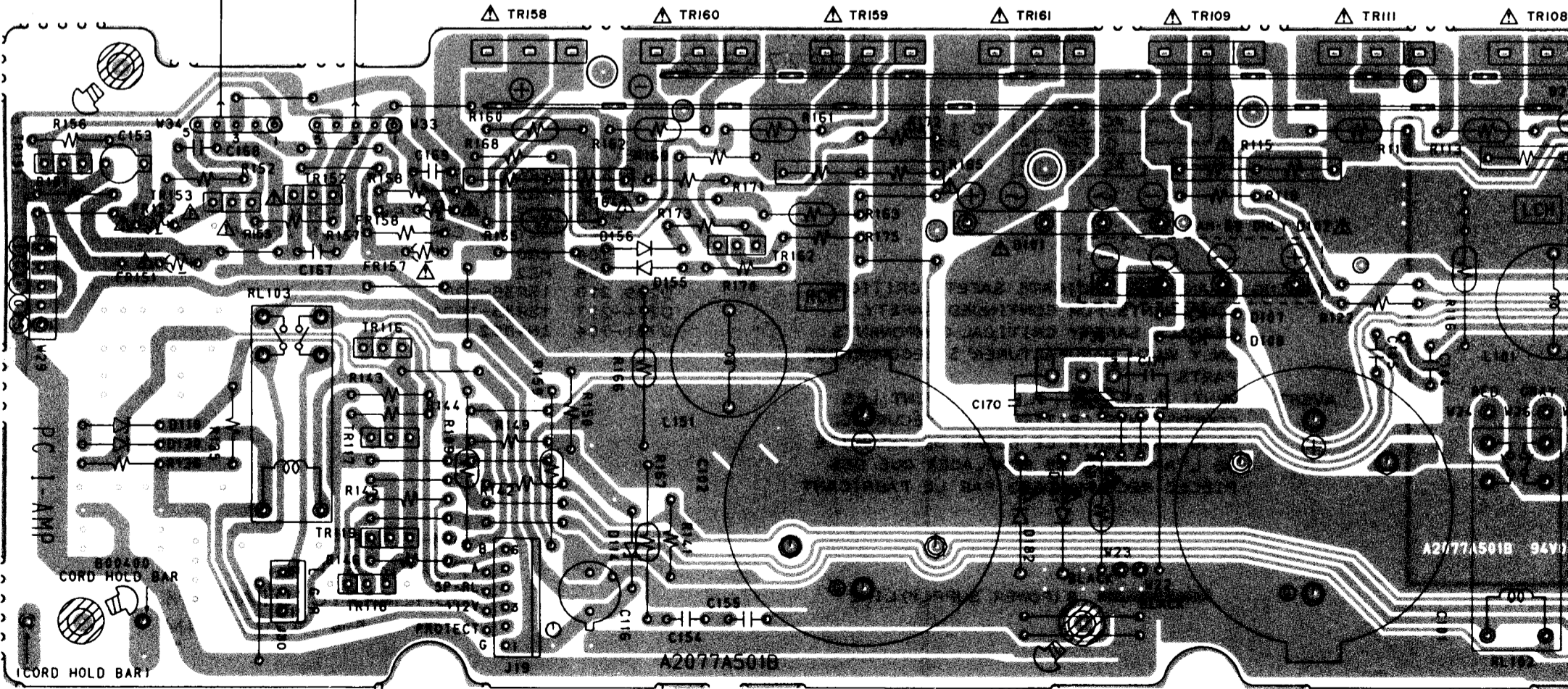
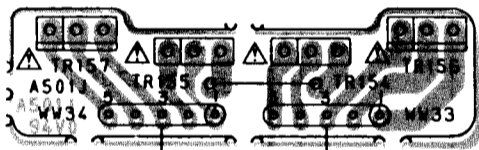
TR101 A2
TR102 A1
TR103 A1
TR108 B1
TR109 C1
TR110 B1

TR111 B1
TR112 A1
TR113 A2
TR116 E1,2
TR117 E2
TR118 E2
TR119 E2
TR151 E1
TR152 E1
TR153 E1
TR158 D1
TR159 C,D1
TR160 D1
TR161 C1
TR162 D1

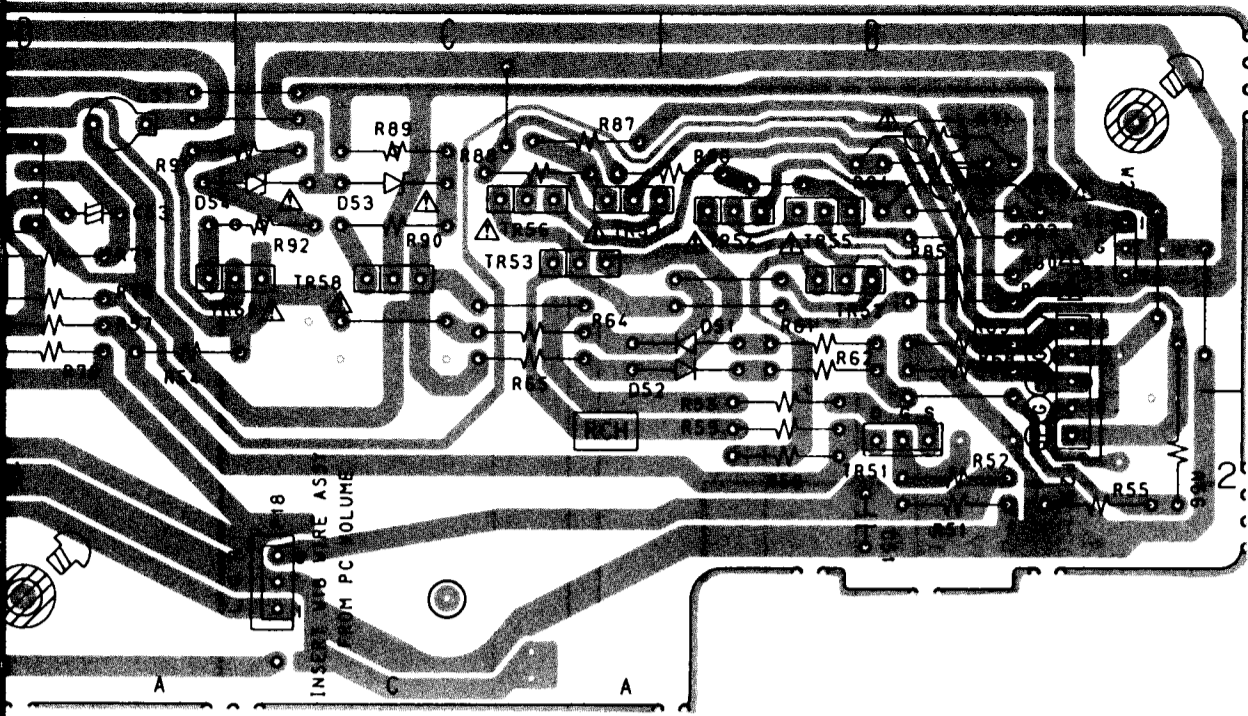
WIRES

W22 C2
W23 C2
W24 B2
W25 B2
W26 B2
W27 B2
W29 E1
W31 A1
W32 A1
W33 E1
W34 E1
W37 A2

THERMO(R) PCB
A2077A501J



I-AMP PCB A2077A501B



WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

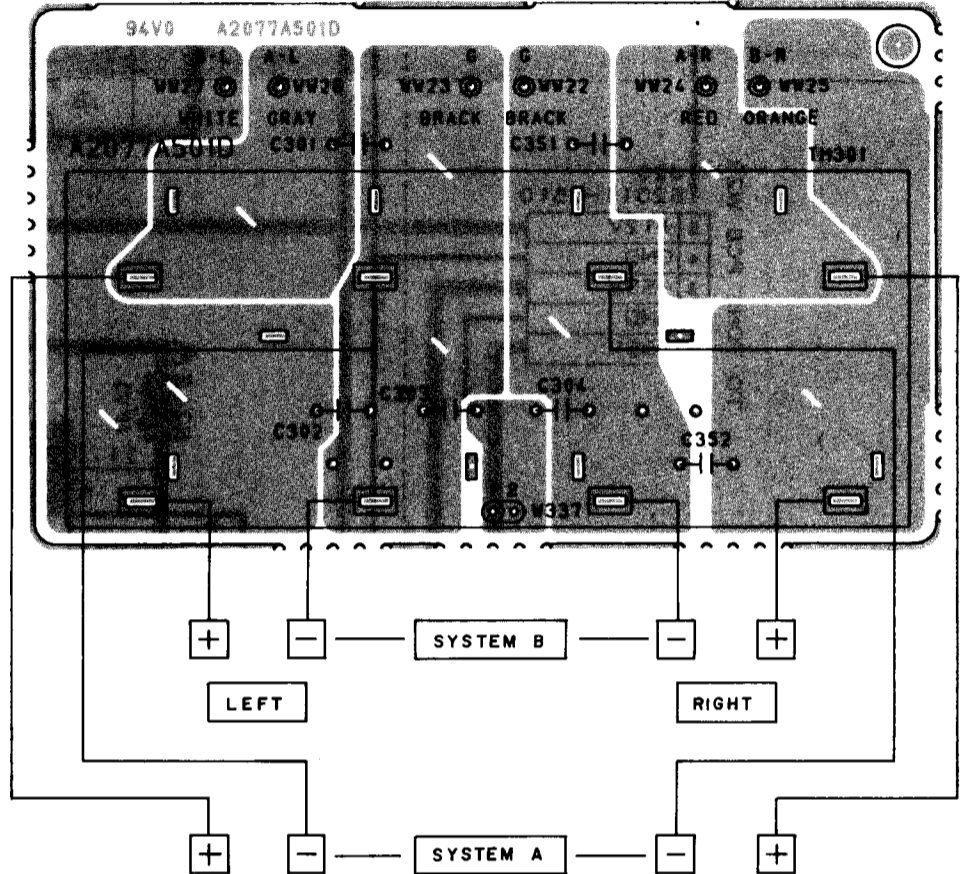
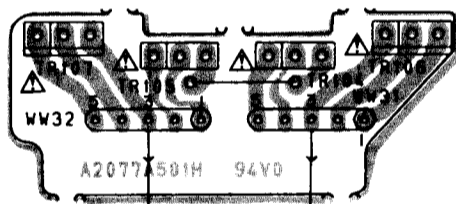
PRINCIPAL PARTS LOCATION

CONNECTORS	TR4	F1
P18	TR5	F1
P29	TR6	G1
	TR7	F,G1
WIRES	TR8	G1
W21	TR10	H1
W28	TR51	B2
	TR52	B1
ICs	TR53	C1
IC1	TR54	B1
	TR55	B1
TRANSISTORS	TR56	C1
TR1	TR57	C1
TR2	TR58	C1
TR3	TR60	C,D1

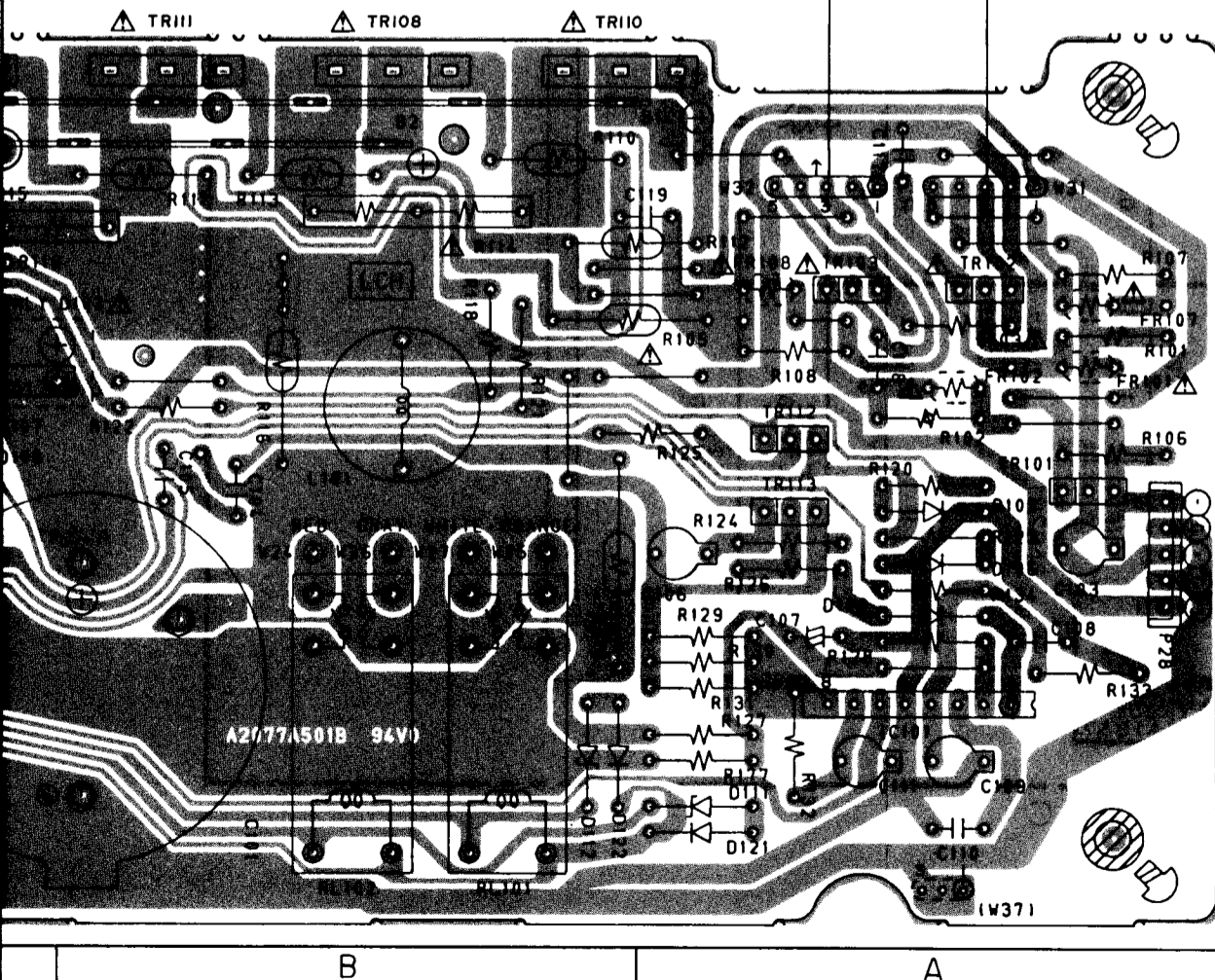
WIRES

W22	C2
W23	C2
W24	B2
W25	B2
W26	B2
W27	B2
W29	E1
W31	A1
W32	A1
W33	E1
W34	E1
W37	A2

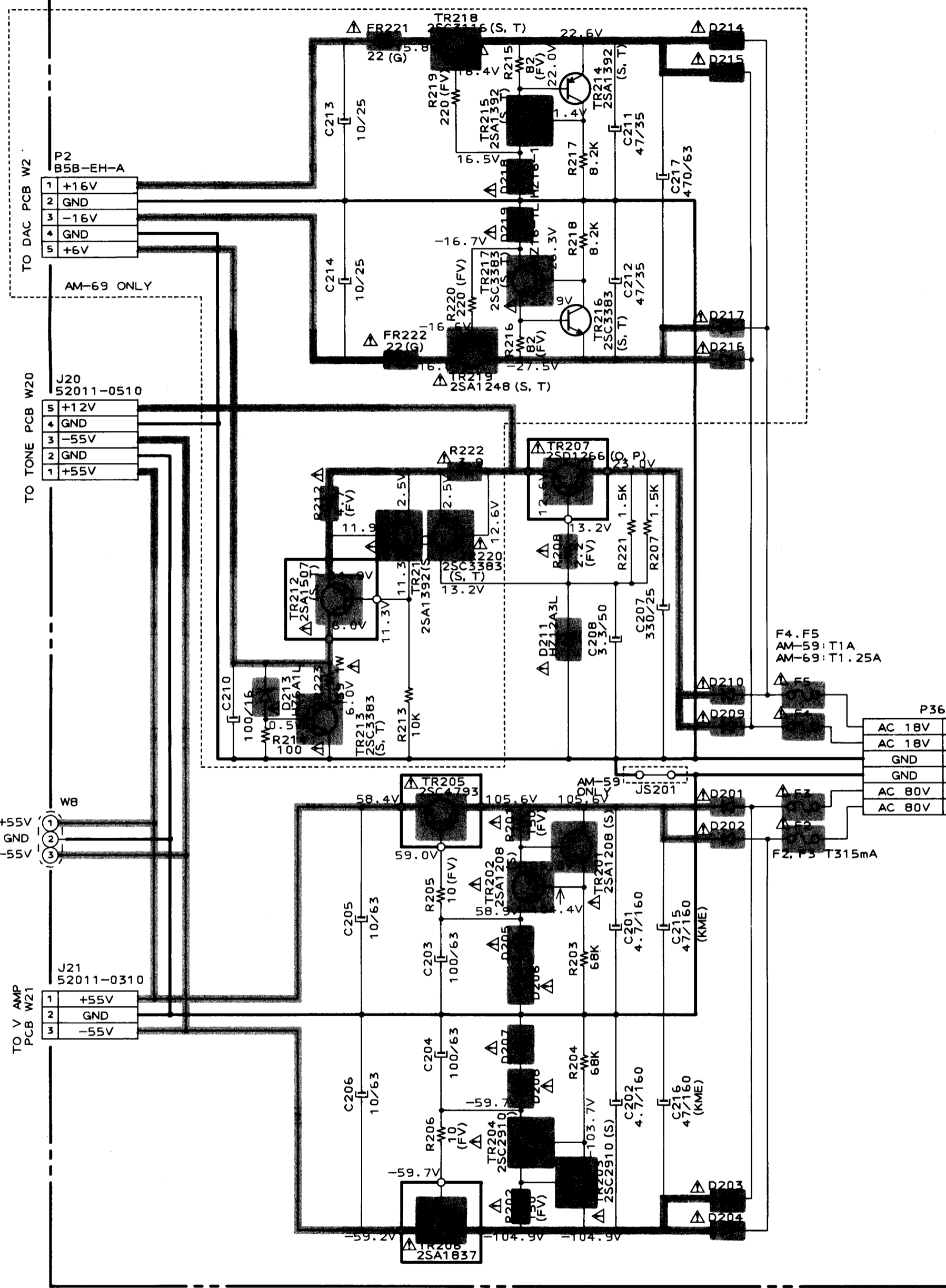
**THERMO(L) P C B
A2077A50IH**



SP TERMINAL PCB A2077A50ID



A B C D E F

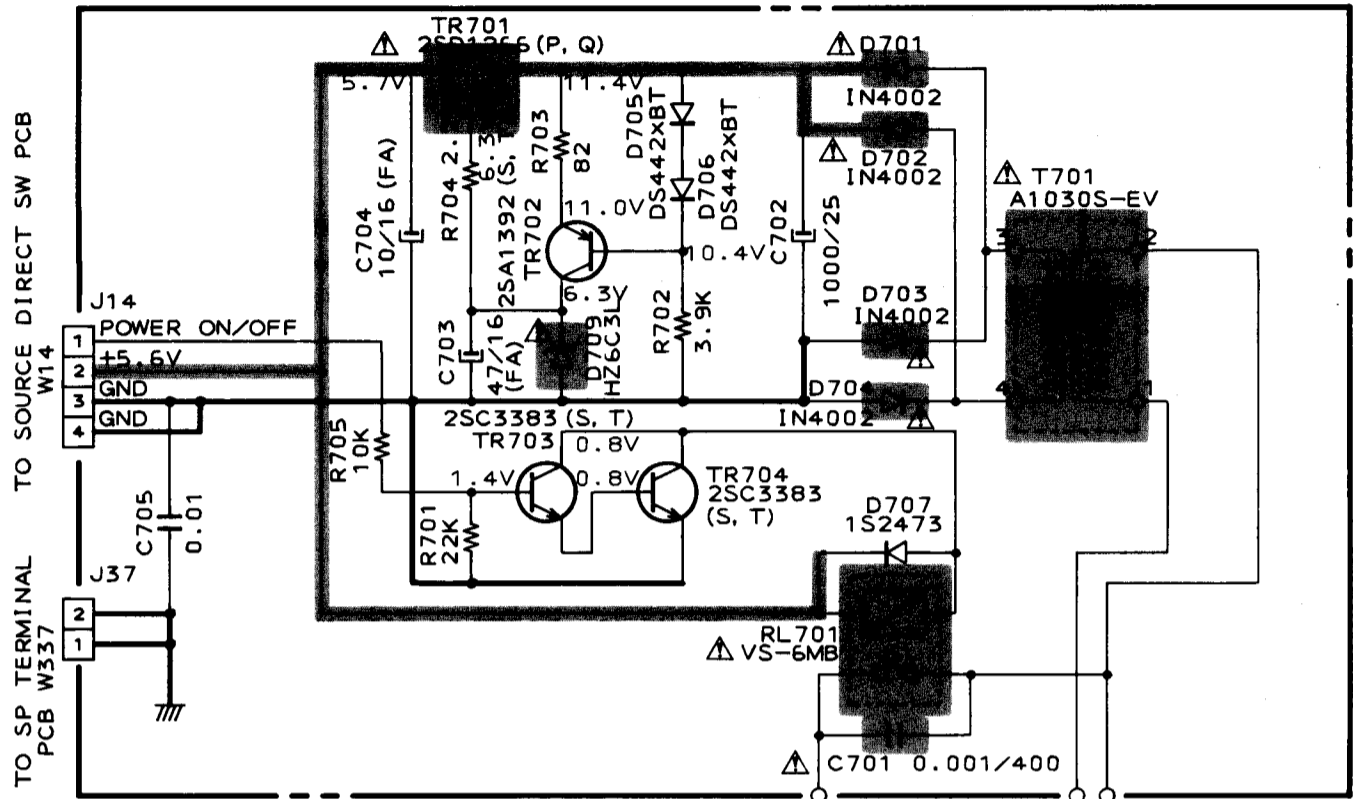


POWER SUPPLY PCB A2077A501C

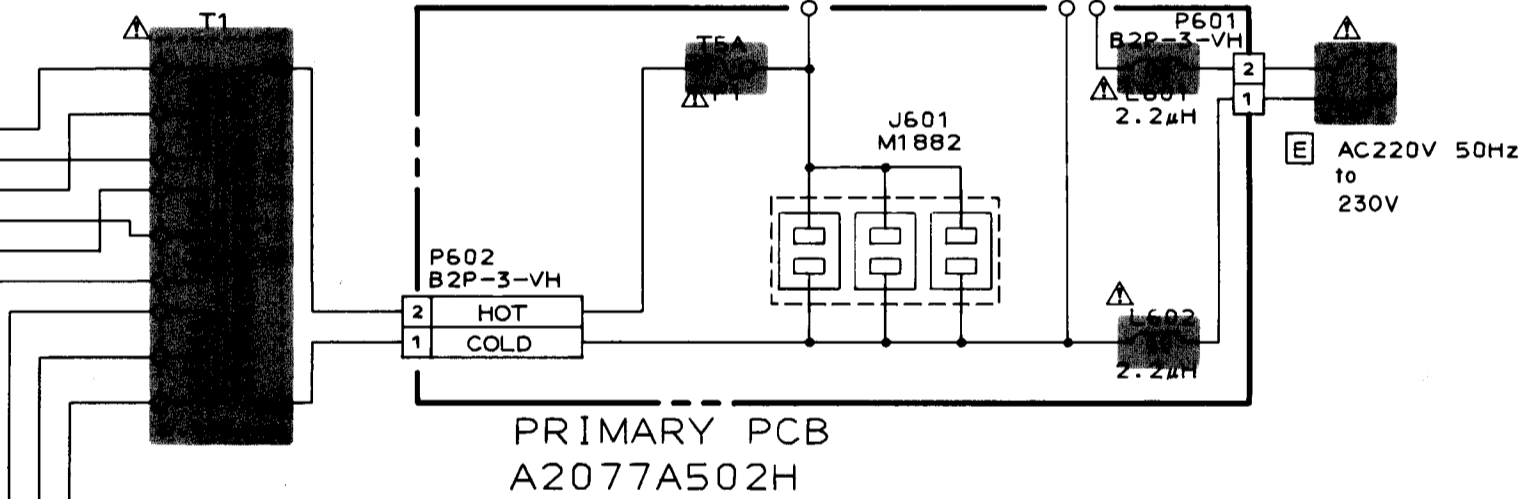
WARNING
AVERTIS

1
2
3
4
5
6
7
8
10

SUB TRANS PCB
A2077A502J



T1 (AM-59: A2077-EV
AM-69: A2078-EV)



PRIMARY PCB
A2077A502H

AC 18V	6
AC 18V	5
GND	4
GND	3
AC 80V	2
AC 80V	1

AC 40V	1
C-TAP	2
AC 40V	3

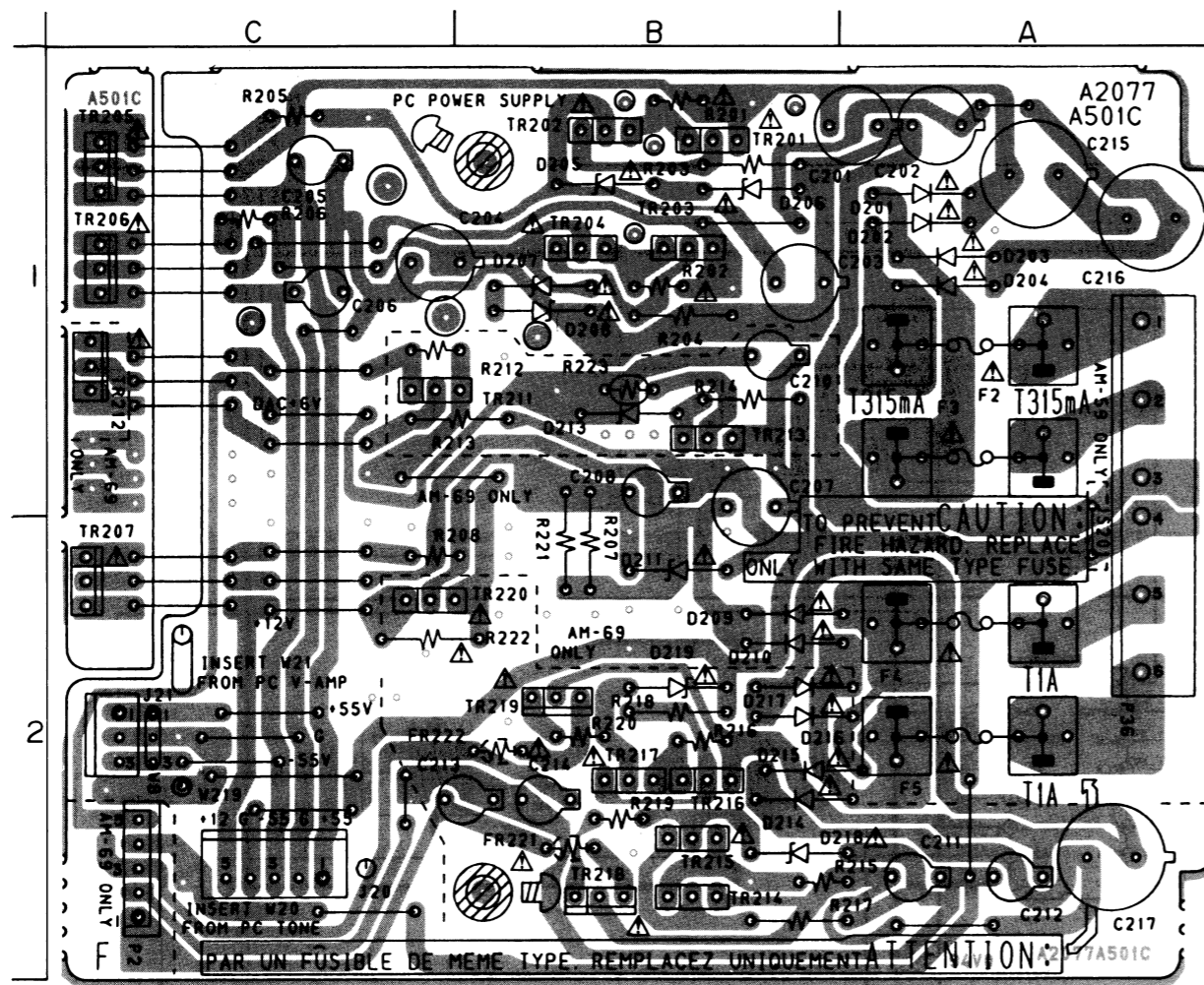
NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μ F (P=PF) 50WV
ALL ELECTROLYTIC CAPACITORS IN μ F/WV (M) AS-1
D201~204 EG01
D205~208 HZ27-3L
D209, 210 1SR35-100A
D214~217 1SR35-100A
D701~704 IN4002

WARNING: \triangle AND \blacksquare INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: \triangle ET \blacksquare , ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ, POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

\blacksquare B (POWER SUPPLY) LINE

AM-59/69
POWER SUPPLY
SCHEMATIC DIAGRAM
No. 5-4 A207704M
A2



POWER SUPPLY PCB A2077A501C

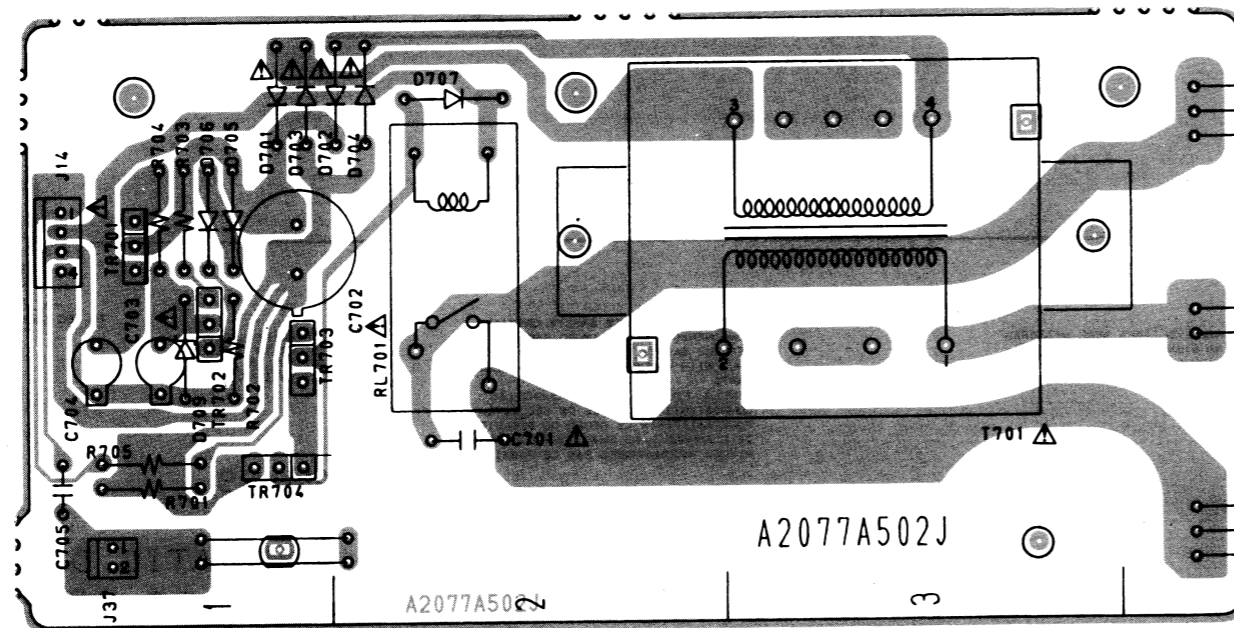
PRINCIPAL PARTS LOCATION

TRANSISTORS

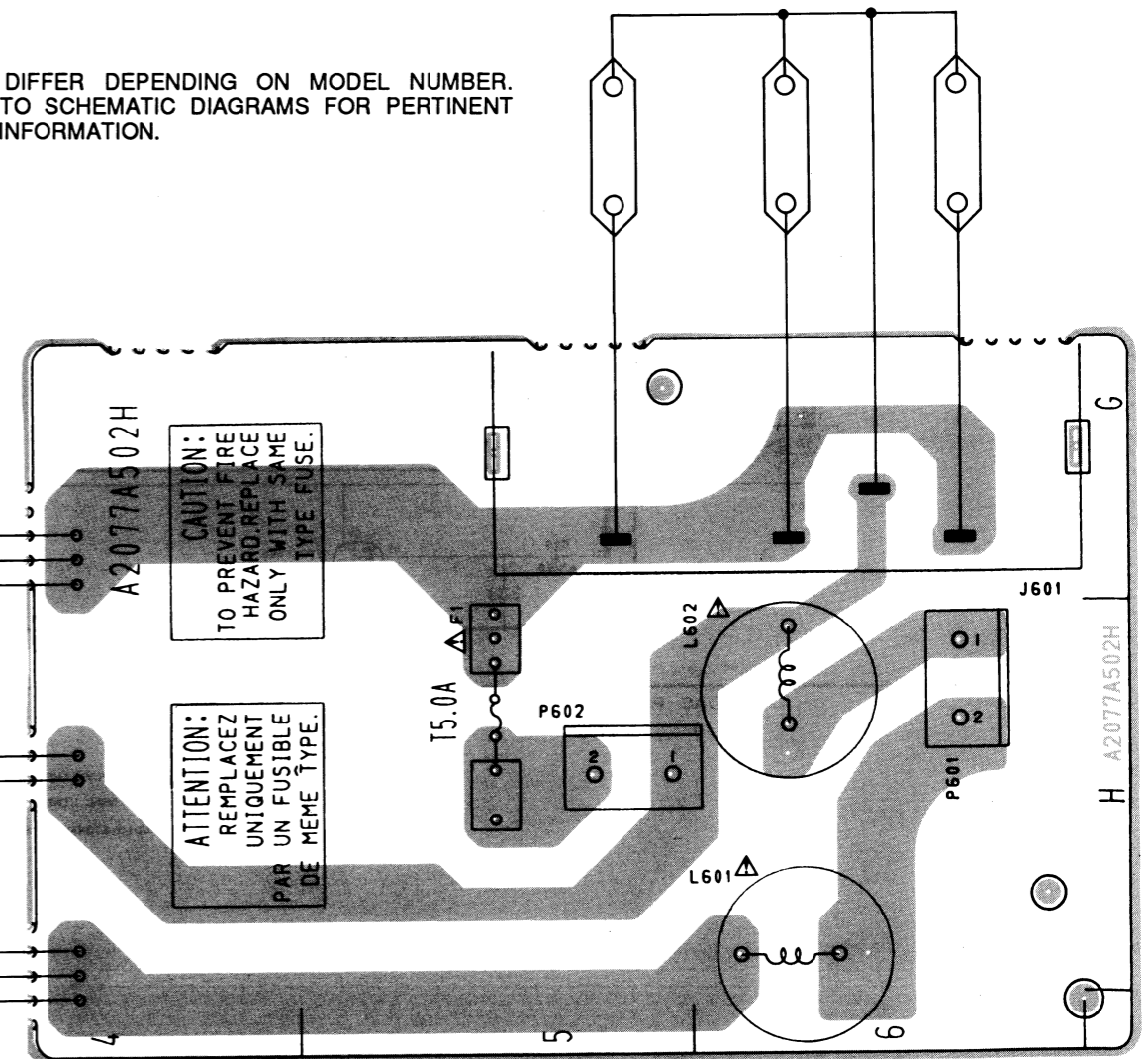
TR201	B1	TR219	B2
TR202	B1	TR220	C2
TR203	B1		
TR204	B1	FUSE RESISTORS	
TR205	C1	FR221	B2
TR206	C1	FR222	B2
TR207	C2		
TR211	C1	CONNECTORS	
TR212	C1	J20	C2
TR213	B1	J21	C2
TR214	B2	P2	C2
TR215	B2	P36	A1,2
TR216	B2		
TR217	B2	WIRE	
TR218	B2	W8	C2

WARNING: Δ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS
 AVERTISSEMENT: Δ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT

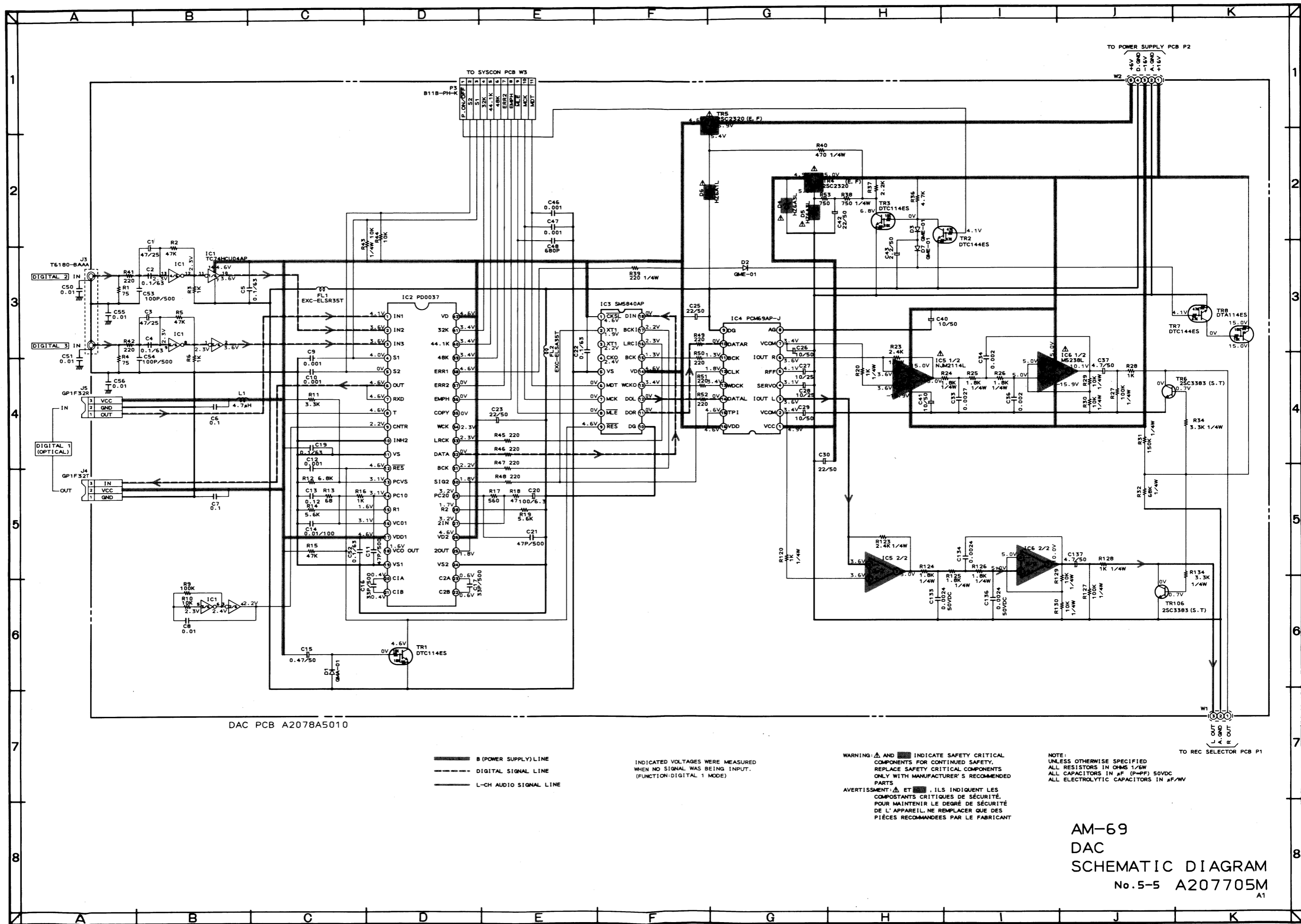
NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PERTINENT PARTS INFORMATION.

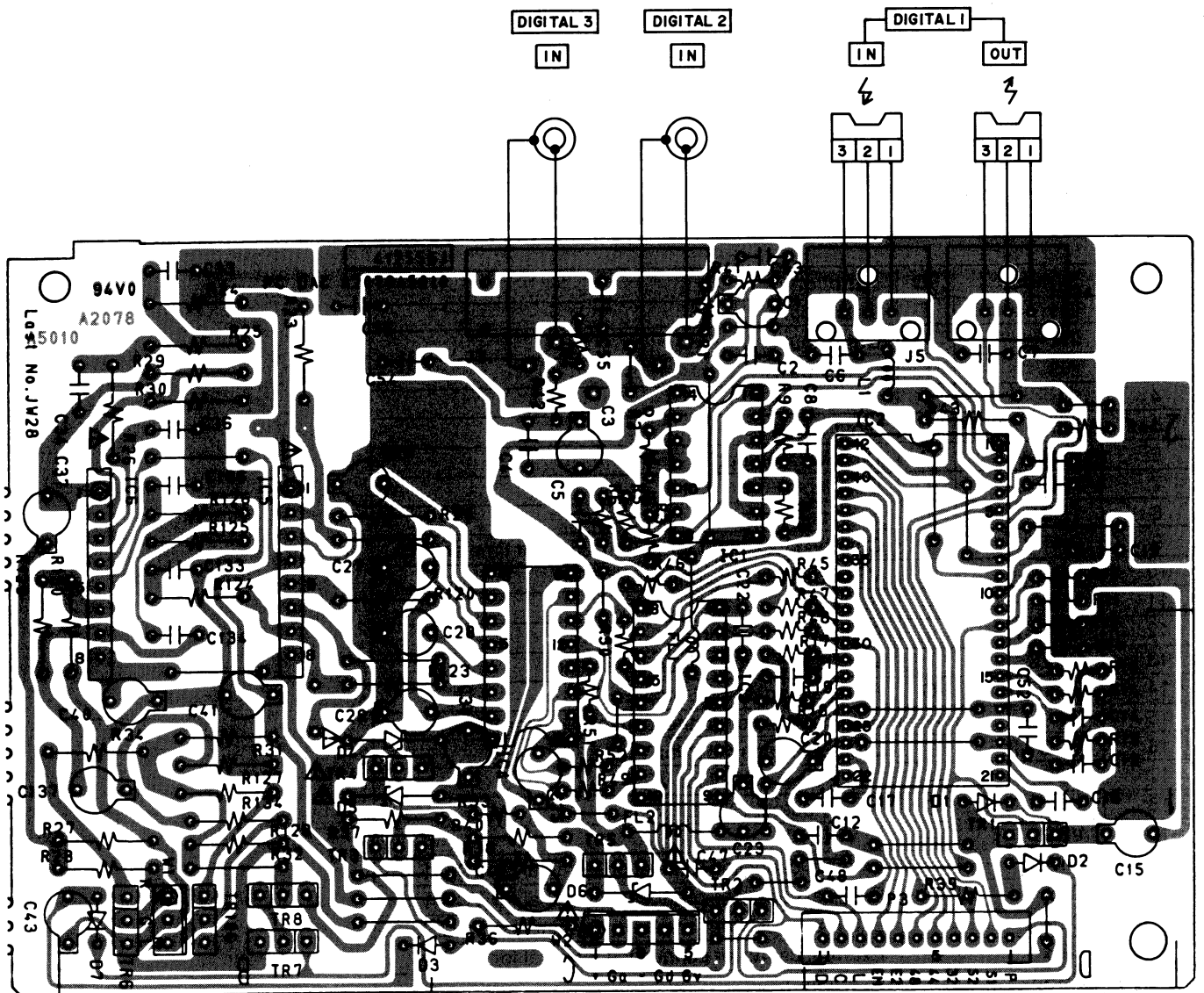


SUB TRANS PCB A2077A502J



PRIMARY PCB A2077A502H



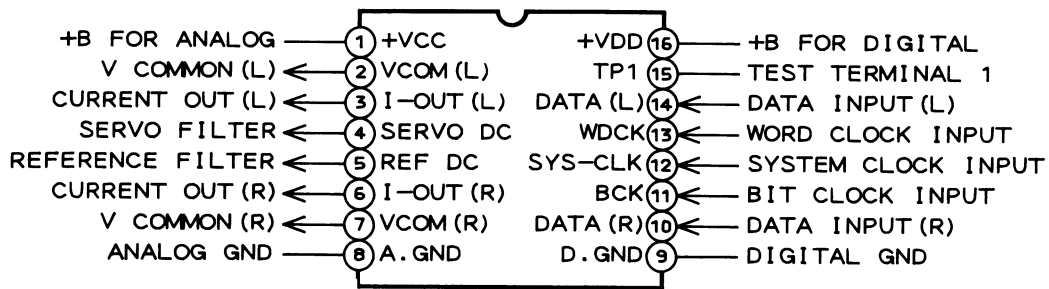


DAC PCB A2078A5010

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

PCM67AP-J (D/A CONVERTOR)



PD0037 (Digital Audio Interface Receiver)

Pin No.	Symbol	I/O	Function
1	IN1	I	Data input 1
2	IN2	I	Data input 2
3	IN3	I	Data input 3
4	S1	I	Input select 1
5	S2	I	Input select 2
6	OUT	O	Data MPX output
7	RXD	I	Data input
8	TEST	I	Test mode input
9	CNTR	I	Counter clock input for ERR 1,2 output time setting
10	INH2	I	VCO 2 ON / OFF control H: OFF
11	VSS	—	(0 V) GND
12	RESET	I	Power ON reset input
13	PSVS	I	VCO 1,2 free-run frequency setting
14	PC1OUT	O	Phase comparator 1 output
15	R1	—	External resistor connection terminal for VCO 1
16	VCO1 IN	I	Control voltage input for VCO 1
17	VDD1	—	(+B) Power supply for VCO 1
18	VCO1OUT	O	VCO 1 output (384fs)
19	VSS1	—	(0 V) GND
20	C1A	—	External capacitor connection terminal for VCO 1
21	C1B	—	External capacitor connection terminal for VCO 1
22	C2A	—	External capacitor connection terminal for VCO 2
23	C2B	—	External capacitor connection terminal for VCO 2
24	VSS2	—	(0 V) GND
25	VCO2OUT	O	VCO 2 output (384 fs)
26	VDD2	—	(+ B) Power supply for VCO 2
27	VCO2IN	I	Control voltage input for VCO 2
28	R2	—	External resistor connection terminal for VCO 2
29	PC2OUT	O	Phase comparator 2 output
30	SIG2	I	Phase comparator 2 input
31	BCK	O	Bit clock output
32	DATA	O	Audio data output
33	LRCK	O	L ch / R ch select pulse out (H: L ch, L: R ch)
34	WCK	O	Word clock output
35	COPY	O	Copy data output (H: copy enable)
36	EMPH	O	H: Emphasis-ON
37	ERR2	O	2nd PLL loop unlock output (H: unlock)
38	ERR1	O	1st PLL loop data read out error output (H: error)
39	48K	O	Sampling frequency data output L: active
40	44.1K	O	
41	32K	O	
42	VDD	—	(+ B) Power supply for logic

SM5840AP (DIGITAL FILTER)

